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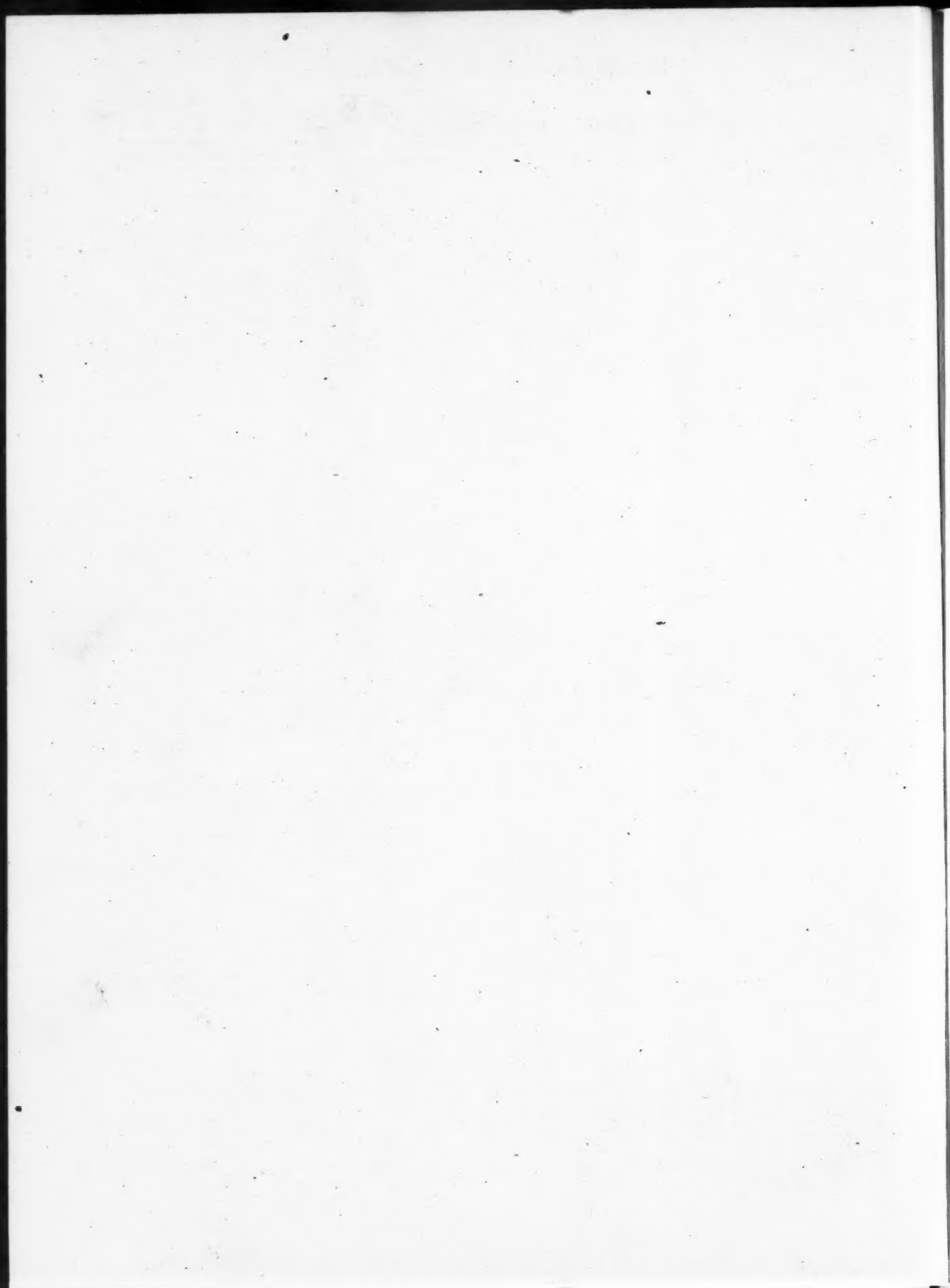
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# THE MEDICAL JOURNAL OF AUSTRALIA.

VOL. I.—6TH YEAR.

SYDNEY: SATURDAY, JANUARY 4, 1919.

No. 1.

## A STUDY OF THE EFFECTS OF HOOKWORM INFECTION UPON THE MENTAL DEVELOPMENT OF NORTH QUEENSLAND SCHOOL CHILDREN.

By J. H. Waite, M.D.,

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and

I. L. Neilson, Australasian Trained Nurses' Association, School Nurse, Department of Public Instruction, Queensland.

Influenced by the demonstrated prevalence of hookworm disease in North Queensland, the Queensland Department of Public Instruction financed the present study of whether and to what extent the mental development of its school children is being impaired through the prolonged anæmia and toxæmia resulting from hookworm infection. To this end the investigation aimed to measure the mentality of a group of hookworm-infested children with the aid of standardized mental tests, and to compare the results so obtained with those similarly obtained from an equally large group of hookworm-free children. The need for collateral physical examinations and measurements was fully realized, but for several reasons this assistance could not be secured.

The tests employed were Goddard's revision of the Binet-Simon tests<sup>1</sup> and the Porteus mazes,<sup>2</sup> both of which are graduated in years from three years to thirteen years of average mentality, and both of which, through widespread application, have been proven reliable measures of intelligence. We also made use of a specially modified "dot counting test," designed to measure mental concentration and mental fatigue.

The Binet-Simon test was applied according to the standard method described by Goddard, and the results in each case were recorded on his "Record Blanks for Revised Binet Tests." To adapt the test to Australian children, the following alterations were required, each of which is allowable under Goddard's list of alternatives:—

VIII. (4) Australian stamps displaced American stamps.

IX. (1) and X. (1) Australian copper and silver currency up to the half-crown displaced American currency.

X. (5) "Cairns" replaced "Philadelphia."

X. (4) The sentences used were:—

(i.) What should one do—

When he is sleepy?

When he sees that it is raining just as he is about to go for a walk?

(ii.) What should one do when someone who has offended him, comes and asks pardon?

(iii.) Why ought one to judge a person more by his acts than by his words?

XI. (1) The sentences used were:—

(i.) I have three brothers—Paul, Ernest and myself.

(ii.) I received a letter from a friend, in

which he said: "If you don't get this letter, just let me know and I'll write again."

(iii.) A man came to see Mr. Jones; Mr. Jones was not at home. I asked his name. He said: "Oh, it is not necessary to leave my name; Mr. Jones knows me."

(iv.) I read in a paper that they fired two shots at a man. The first shot killed him, but the second didn't.

(v.) The judge said to the prisoner: "You are to be hanged, and I hope it will be a warning to you."

XI. (5) The dissected sentences used were:—

(a) A mother boy makes good happy his.

(b) Day it we picnic the our rained had.

(c) If asked ball my have we mother play I may.

XII. (5) The problems used were:—

(a) "I saw a crowd going along the street. They were all dressed up, and each had a basket or bundle. Where were they going?"

(b) "My neighbour has been receiving strange visitors. He has received one after another a physician, a lawyer and a clergyman. What has happened at the house of my neighbour?"

The Porteus tests employed comprised the five-year maze to the thirteen-year maze inclusive. The maze for each year was exposed to the child's scrutiny for ten seconds, and then the child was required with a pencil to record its effort to find the way out. Three unsuccessful trials were taken as a failure in the maze of that year, and successive failures terminated the examination.

The dot counting test, embracing 75 dots in all, is constructed as follows:—

First line: Groups of 1, 2, 3 and 4 dots each; 10 dots in all.

Second line: Groups of 2, 4, 3 and 6 dots each; 15 dots in all.

Third line: Groups of 7, 3, 2, 5 and 3 dots each; 20 dots in all.

Fourth line: Groups of 4, 8, 2, 7 and 9 dots each; 30 dots in all.

Each dot measures 2 mm. in diameter, and is spaced 2 mm. from its neighbour in the group. The groups are separated by at least 15 mm.

In the application of the test, the child is required to place its hands at rest beneath the table and to proceed counting the dots with the aid of the eye alone. One trial only is allowed, and the time required for counting 10, 25, 45 and 75 dots successful is written at the end of each line when so completed.

The order adopted for the application of the tests was:—

First: The Binet-Simon test.

Second: The Porteus test.

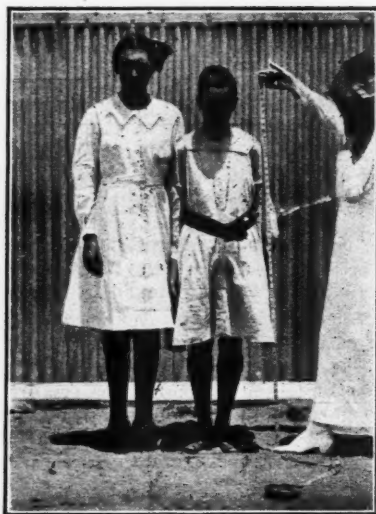
Third: The dot counting test.



Without a very large special staff, it was impossible to apply mental tests to each one of the 5,000 school children residing within the areas visited, and therefore a selection of children for testing was made in the following manner. On the basis of microscopic findings, the Queensland hookworm campaign divided the total population into three natural groups:—

- (1) The heavily infected persons, presenting hookworm ova in plain smear examinations of stool;
- (2) The lightly infected persons, presenting hookworm ova only in smears of centrifuged stool; and
- (3) The non-infected persons, who showed no ova in four successive stool examinations—two of plain smears and two of centrifuged smears.

From all school children examined in the Cairns, Innisfail and Ingham districts 340 names for mental



	Hookworm-Free Case (B.W.).	Hookworm Case (V.R.).
Age .. .. .	15.0 years	14.9 years
Hæmoglobin .. ..	85%	60%
Height .. .. .	62.6 inches	57.7 inches
Weight .. .. .	98.4 pounds	87.7 pounds
Sex Development..	Primary and Secondary Characteristics	Retarded

testing were selected by one of us (Waite), with the special endeavour to secure a fair representation of all strata of society and of all sections of town and country, and limiting the age selection to six to fourteen years for inclusion within the recognized scope of the tests. After selection the names were assembled in a composite list, arranged alphabetically, and handed to Nurse Neilson, who applied all mental tests without any knowledge of the results of stool examinations. After the tests were graded by Nurse Neilson they were returned to the office file and given serial numbers:—

- Nos. 1 to 116: the non-infected group.  
 Nos. 201 to 265: the lightly infected group.  
 Nos. 401 to 559: the heavily infected group.

The tests were always applied in a quiet room. The

average time required for applying the three tests to the individual child was 35 to 40 minutes. Careful records of time in the several tests were kept with the aid of a stop watch. The actual or chronological age of each child was obtained from the school records, and later, through the courtesy of the Clerk of Petty Sessions, who gave us access to the birth certificates, we were able to check over the bulk of the children tested, and thereby to correct several ages misrepresented by the parents to the school authorities.

Hæmoglobin estimates by Tallqvist were taken from 196 children who consented to the ordeal—48 from the non-infected, 48 from the lightly infected, and 100 from the heavily infected children.

#### Results.

The results bring to light clearly two features, namely, that hookworm infection produces in grow-



	II. Hookworm Case (R.B.).	Hookworm Case (J.M.).
Age .. .. .	21.0 years	21.0 years
Hæmoglobin .. ..	75%	70%
Height .. .. .	60.0 inches	54.5 inches
Weight .. .. .	88.0 pounds	77.0 pounds
Sex Development..	Retarded	Infantile Genitalia

ing children severely arrested mental development and considerable mental sluggishness.

#### I.—Arrested Mental Development.

The Binet-Simon and Porteus results given in Appendix "A" show the following summary:—

	Non-infected.	Lightly Infected.	Heavily Infected.
No. of Cases..	116	65	159
Average Retardation—			
By Binet .. ..	— 3.9 months	— 9.3 months	— 23.4 months
By Porteus..	— 2.7 months	— 4.7 months	— 16.0 months
Average Hæmoglobin ..	85.1%	76.4%	70.9%

The cause of both the mental retardation and the sluggishness is at once evident in the prolonged

anæmia and toxæmia resulting from hookworm infection, which constantly upsets the metabolism through insufficient oxidation of food elements in the tissues, and thereby interferes with body functions and body growth. The hæmoglobin estimates show a total average reduction in persons heavily infected with hookworm of 14.2% from the average in non-infected persons, and extreme individual reductions to only 20% of the normal amount of hæmoglobin. Of all hookworm-infested children tested, both lightly and heavily infested, three-fifths of them show a hæmoglobin of 70% and under.

The selection of children for testing solely upon the basis of stool examinations has kept a constant factor of the other causes of mental defect operating in the several communities, namely, hereditary mental defect, syphilis transmitted from parents, parental alcoholism, enlarged tonsils and adenoid vegetations, etc. For example, the 116 hookworm-free children include five mental defectives (4.3%) in cases 26, 34, 99, 106

and 115, who show by Binet scale a combined deficiency of 19.7 years, and thereby reduce the average mentality of the group by 2.0 months. Inasmuch as random selections were made throughout the several communities, we feel safe to presume that all causes of mental defect other than hookworm disease are represented alike in the three groups.

With regard to the amount of mental retardation directly ascribable to hookworm infection, the study of the mental test results brings out three deductions:—

1. The degree of hookworm infection, and therefore the amount of anæmia, definitely influences the amount of retardation of mental development. Lightly infected children in our series averaged 5.4 months by Binet and 2.0 months by Porteus lesser mentality than their hookworm-free associates, while the heavily infected children showed by comparison with hookworm-free an average reduction of 19.5 months by Binet and 13.3 months by Porteus (see Table I.).

Table I.—Binet-Simon Results by Age Groups.

Age Group.	Hookworm Free.		Light Infections.		Heavy Infections.	
	Case Numbers.	Retardation Average in Years.	Case Numbers.	Retardation Average in Years.	Case Numbers.	Retardation Average in Years.
To 6.5 years ..	88, 113, 67, 84	+ 0.5	244, 258	— 0.35	537, 475, 411, 447, 493, 538	— 0.033
6.6 to 7.5 years	6, 9, 23, 27, 29, 30, 36, 46, 72, 83, 96, 110, 112	+ 0.25	224, 230, 236, 247, 262, 264	— 0.116	421, 462, 468, 470, 479, 481, 497, 506, 527, 545	— 1.06
7.6 to 8.5 years	1, 5, 18, 24, 43, 48, 49, 70, 71, 76, 77, 79, 80, 82, 86, 93, 97, 100, 111, 116	+ 0.005	202, 203, 223, 225, 227, 241, 243, 246, 252	— 0.3	413, 433, 469, 472, 487, 488, 489, 513, 514, 523, 546	— 0.545
8.6 to 9.5 years	2, 7, 19, 42, 47, 59, 63, 68, 69, 81, 92, 95, 102, 109, 114	+ 0.22	201, 209, 210, 229, 233, 249, 250, 253, 254, 265	— 0.03	407, 409, 412, 419, 427, 429, 445, 471, 476, 482, 492, 499, 518, 524, 535, 539, 540, 542, 544, 552, 553, 556, 557	— 0.843
9.6 to 10.5 years	8, 14, 16, 25, 31, 35, 40, 41, 44, 45, 54, 56, 87, 91, 98, 105	+ 0.006	205, 207, 212, 214, 215, 218, 219, 222, 226, 228, 231, 238, 242, 245, 251, 257, 260, 261	— 0.538	406, 424, 426, 428, 434, 435, 440, 442, 448, 449, 452, 454, 460, 463, 467, 477, 478, 484, 496, 501, 505, 507, 511, 512, 515, 521, 531, 547, 550, 551	— 1.66
10.6 to 11.5 years	11, 13, 15, 17, 21, 32, 50, 55, 57, 60, 61, 65, 66, 78, 90, 101, 103, 104, 108	— 0.657	204, 213, 237, 263	— 0.45	401, 402, 414, 416, 418, 423, 432, 438, 443, 457, 459, 461, 466, 474, 486, 490, 500, 522, 526, 530, 532, 548, 555	— 2.247
11.6 to 12.5 years	4, 20, 22, 26, 37, 38, 39, 51, 58, 64, 74, 85, 89, 94, 107, 115	— 1.05	217, 221, 235, 239, 248, 255, 256, 259	— 2.1	405, 417, 431, 437, 439, 441, 446, 455, 464, 480, 494, 498, 502, 503, 504, 508, 510, 520, 543, 558, 559	— 2.51
12.6 to 13.5 years	3, 10, 12, 33, 34, 52, 53, 75	— 1.28	206, 208, 211, 216, 220, 240	— 2.1	403, 404, 408, 410, 415, 422, 425, 430, 436, 451, 453, 458, 465, 473, 491, 495, 519, 525, 533, 534, 536, 549, 554	— 3.17
13.6 to 14.5 years	28, 62, 73, 99, 106	— 1.4	232, 234	— 2.65	456, 483, 485, 509, 516, 517, 528, 541	— 3.56
14.6 to 15.5 years	—	—	—	—	420, 444, 450, 529	— 4.525

The Porteus test, as used, being adapted to the subnormal child, tends to score all children higher than the Binet-Simon scale. By a new method of

scoring Porteus<sup>3</sup> brings his level of normality in closer conformity to that in the Binet-Simon scale.

2. The duration of hookworm infection is import-

ant, because the longer the infection persists the greater is the mental retardation therefrom.<sup>4</sup> Separated by age groups, the three classes of children, according to increasing age, show a constant decrease of mentality as compared with the theoretical normal mentality for that corresponding year, due no doubt to the imperfections of the scale adjustment to the true normal and to the summation of mental defect, disease, faulty educational methods and other obscure factors. However, by comparison of the similar age-group results of the hookworm-free and the heavily infected children, it is seen that the infected children of 8 years suffer 6.6 months' greater retardation than the hookworm-free; that the infected children of eleven years suffer likewise 19.0 months' greater retardation; and that infected children of fourteen years suffer from 25.9 months' greater retardation than fourteen-year-old hookworm-free children. For this increasing retardation hookworm disease is alone responsible.

3. The age of onset of the disease is likewise important, inasmuch as the most backward hookworm children invariably give the history of an early infection.

II.—Mental Sluggishness.

An outspoken feature of all the mental test results is the uniform slowing down of mental processes in hookworm children, and it is shown in all three tests—Binet VIII. (2), the Porteus mazes and the dot counting tests (see Tables II., III. and IV.).

The 92 hookworm-infested children who successfully counted backward from twenty to one, required on the average two seconds longer than the average time for the 60 hookworm-free children. Likewise, children of the same physical ages, but with the one difference—hookworm infection—showed a uniform

average retardation in the time requisite for the successful completion of both the Porteus mazes and the dot counting tests by the hookworm group.

#### Significance of Results.

The direct outcome of the results of such a blighting disease, which is preying upon 40% of the total

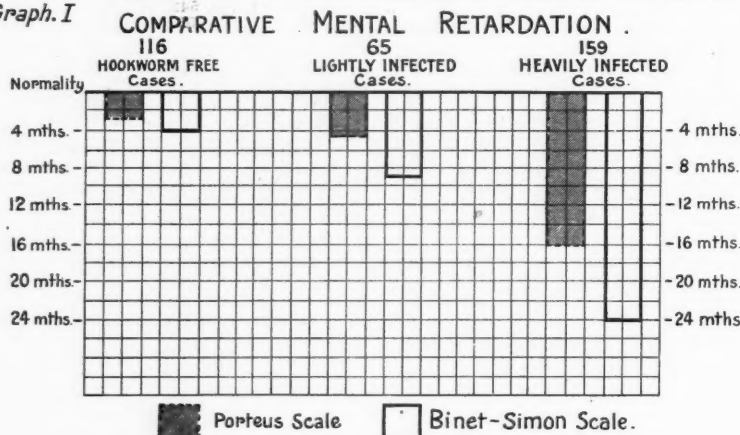
school population from Cooktown to Townsville, and which is stamping serious mental, physical and sexual degeneracy upon 25% of the total school population, can be nothing other than the weakening of the social fabric and the unfitting of the coming generation for the struggle for existence. Indeed,

the tendency of the disease, if not controlled, is toward the obliteration of the race through the unsexing of its victims and reducing individual resistance toward acute infections, such as pneumonia and tuberculosis. To the economic loss from social inefficiency must be added the wasted educational effort of 4,000 teachers, with an expensive plant, trying to carry along 40% of

relative mental deficient and mental laggards among their classes. Fortunately, the disease, with all of its effects, can be prevented through applied sanitation, and the infected children can be cured, with resulting physical and mental recuperation, provided the disease has not through prolonged duration indelibly

stamped its degeneracy upon the bodies of its victims. At present the State of Queensland is spending fifty times as much money on its educational effort as it is spending on health activities, notwithstanding the fact that an entirely preventable disease is daily sapping the vitality of its school children. The solution of the entire problem demands an enlargement of health activities commensurate to the problem, by providing a sufficient corps of trained

Graph I.



Graph II.

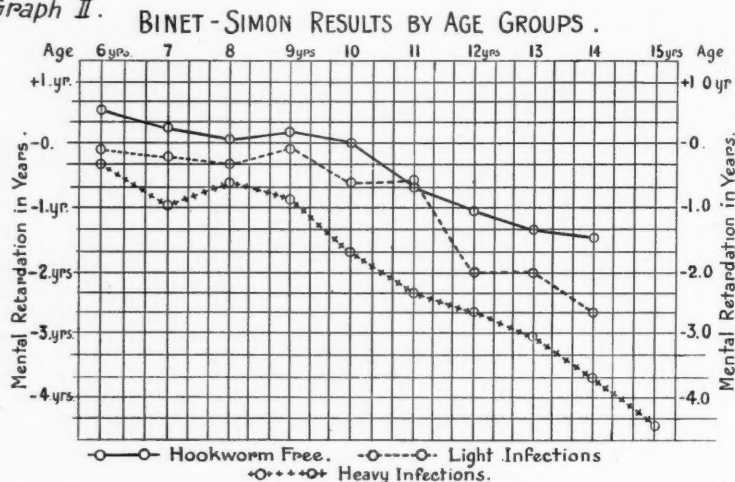




Table II.—Relative Times Required—Binet Test VIII. (2).  
(Counting backward from 20 to 1 successfully.)

Age Group.	Hookworm Free.		Hookworm Cases.		Average Retardation.
	Case Numbers.	Average Group Time.	Case Numbers.	Average Group Time.	
8.6 to 9.5 years..	2, 19, 47, 59, 63, 68, 69, 81, 92, 95, 114	13.0"	412, 419, 427, 429, 471, 476, 492, 499, 524, 535, 542, 552, 553, 556, 557	14.4"	1.4"
9.6 to 10.5 years ..	14, 16, 25, 31, 35, 40, 44, 45, 54, 56, 87, 91, 98, 105	10.6"	424, 426, 428, 434, 442, 448, 449, 452, 460, 463, 467, 477, 478, 484, 496, 505, 507, 511, 512, 515, 521, 531, 547, 551	14.5"	3.9"
10.6 to 11.5 years ..	13, 15, 21, 32, 55, 57, 60, 61, 65, 66, 78, 90, 101, 103, 104, 108	10.7"	416, 418, 432, 438, 457, 459, 474, 486, 490, 522, 526, 530, 532, 555	12.1"	1.4"
11.6 to 12.5 years ..	4, 20, 22, 37, 51, 58, 64, 74, 85, 89, 94, 107	10.6"	431, 439, 441, 446, 455, 464, 480, 494, 498, 502, 504, 508, 510, 520, 558	12.0"	1.4"
12.6 to 13.5 years ..	10, 33, 53	8.6"	408, 410, 415, 422, 430, 436, 453, 458, 465, 473, 491, 495, 519, 525, 533, 534, 549, 554	11.4"	2.8"
13.6 to 14.5 years ..	62, 73, 99, 106	9.6"	456, 509, 516, 517, 528, 541	11.5"	1.9"
Total .. ..	60 tests	10.92"	92 tests	12.96"	2.0"

Table III.—Porteus—Total Success Times—by Age Groups.

Age Group.		Maze V.		Maze VI.		Maze VII.		Maze VIII.		Maze IX.		Maze X.		Maze XI.	
		No.	Av'ge Time, Secs.	No.	Av'ge Time, Secs.	No.	Av'ge Time, Secs.	No.	Av'ge Time, Secs.	No.	Av'ge Time, Secs.	No.	Av'ge Time, Secs.	No.	Av'ge Time, Secs.
5.6 to 6.5 years..	Infected .. ..	4	36.6	4	14.0	4	18.8								
	Non-Infected ..	2	30.0	2	11.5	2	16.0								
	Retardation .. ..		-6.6		-2.5		-2.8								
6.6 to 7.5 years..	Infected .. ..	10	36.8	8	17.6	7	19.5	2	43.7						
	Non-Infected ..	11	35.0	11	12.0	11	15.7	6	42.6						
	Retardation .. ..		-1.8		-5.6		-3.8		-1.1						
7.6 to 8.5 years..	Infected .. ..	10	34.3	10	13.7	10	27.1	5	36.1						
	Non-Infected ..	16	36.6	16	13.1	16	17.2	15	35.6						
	Retardation .. ..		+2.3		-0.6		-9.9		-0.5						
8.6 to 9.5 years..	Infected .. ..	23	35.0	23	14.1	20	15.3	15	26.1	15	37.0	11	51.1		
	Non-Infected ..	14	31.9	14	16.3	14	11.7	12	27.0	11	33.8	8	46.0		
	Retardation .. ..		-3.1		+2.2		-3.6		+0.9		-3.2		-5.1		
9.6 to 10.5 years.	Infected .. ..	29	37.5	28	14.1	26	14.4	22	27.5	18	38.1	10	43.5	3	67.0
	Non-Infected ..	13	27.8	13	12.3	12	10.9	12	22.3	12	36.6	8	43.4	5	58.6
	Retardation .. ..		-9.7		-1.8		-3.5		-5.2		-1.5		-0.1		-8.4
10.6 to 11.5 years	Infected .. ..	21	33.5	21	11.7	21	11.8	20	28.1	15	30.8	8	46.8	5	94.5
	Non-Infected ..	18	26.9	18	10.2	17	9.0	15	17.5	15	28.6	15	41.1	14	63.0
	Retardation .. ..		-6.6		-1.5		-2.8		-10.6		-2.2		-5.7		-31.5
11.6 to 12.5 years	Infected .. ..	19	27.0	19	9.5	19	7.2	19	16.7	19	22.7	15	33.7	6	67.0
	Non-Infected ..	16	26.8	16	8.7	16	7.0	15	14.0	15	22.7	14	33.5	11	63.4
	Retardation .. ..		-0.2		-0.8		-0.2		-2.7		-0		-0.2		-2.6
12.6 to 13.5 years	Infected .. ..	22	32.1	22	12.8	22	7.6	21	15.7	21	24.2	15	36.7	14	65.1
	Non-Infected ..	6	32.2	6	9.0	6	5.5	6	13.5	6	24.2	5	33.0	5	60.7
	Retardation .. ..		+0.1		-3.8		-2.1		-2.2		-0		-3.7		-4.4

Table IV.—Dot Counting Test.

Age Group.	Hookworm-Free Children.					Lightly Infected Children.					Heavily Infected Children.				
	Dots.					Dots.					Dots.				
	Tests.	10	25	45	75	Tests.	10	25	45	75	Tests.	10	25	45	75
7 years .. ..	11	5.1	15.4	29.8	54.2	6	6.8	18.3	32.0	56.5	6	7.1	18.5	31.5	54.0*
8 years .. ..	19	5.3	15.0	28.5	51.6	8	5.4	16.0	32.6	57.7	8	5.7	15.0	33.4	68.0
9 years .. ..	11	4.6	13.7	26.5	47.6	10	4.6	13.8	26.3	47.1	21	5.1	15.5	28.2	46.8
10 years .. ..	15	3.6	10.8	21.9	38.5	16	4.4	12.7	24.0	42.2	23	4.3	14.6	24.0	45.4
11 years .. ..	18	4.1	11.5	23.0	39.7	4	4.7	13.2	25.0	43.0	20	4.5	13.1	23.7	42.6
12 years .. ..	12	3.7	11.2	22.3	40.0	8	5.0	13.2	22.6	42.0	20	4.1	11.3	22.5	42.3
13 years .. ..	8	3.6	10.6	21.4	35.9	6	3.5	10.3	18.3	32.0	21	4.3	12.0	22.6	41.2
14 years .. ..	4	3.7	11.0	21.0	41.0	2	5.0	13.0	24.0		8	4.6	11.8	25.8	50.7

\* Average time of group expressed in seconds.

sanitarians to penetrate every settlement and to teach the people the vital necessity of applied sanitation.



### III.

#### Hookworm Case (H.G.). Hookworm-Free Case (R.M.).

Age .. .. .	18.0 years	18.0 years
Hæmoglobin .. ..	70%	..
Height .. .. .	59.0 inches	..
Weight .. .. .	70.0 pounds	..
Sex Development..	Infantile Genitalia ..	..

### References.

<sup>1</sup> *The Training School*, January, 1910, "The Binet-Simon Measuring Scale for Intelligence," by H. H. Goddard.

<sup>2</sup> *Amer. Journ. of Psycho-Asthenics*, June, 1915, by S. D. Porteus.

<sup>3</sup> *Journal of Educational Psychology*, January, 1918, "The Measurement of Intelligence," by S. D. Porteus.

<sup>4</sup> Publication No. 3, International Health Board, 1916, "Effects of Hookworm Disease on the Mental and Physical Development of Children," by E. K. Strong, Jun.\*

\* Dr. Strong obtained similar results in North Carolina, and, what is more important, he showed that treatment alleviates hookworm mental degeneracy to some extent and that the longer the child has had hookworm disease the less rapid will be his mental development after he has been treated.—J.H.W.

### APPENDIX "A."

#### Hookworm-Free Children.

Case Number.	Actual Age. Years.	Binet.			Porteus.			Hæmoglobin.
		Mental Age. Years.	Re-tarded. Years.	Ad-vanced. Years.	Mental Age. Years.	Re-tarded. Years.	Ad-vanced. Years.	
1	7.7	9.4		1.7	10.0		2.3	90%
2	9.0	9.4		0.4	11.0		2.0	85%
3	13.0	11.2	1.8		9.0	4.0		100%
4	12.0	11.0	1.0		10.0	2.0		85%
5	8.1	8.0	0.1		10.0		1.9	95%
6	7.0	8.0		1.0	7.0			
7	8.9	10.0		1.1	10.0		1.1	85%
8	9.7	9.8		0.1	9.0	0.7		80%
9	7.2	8.0		0.8	10.0		2.8	70%
10	13.2	14.0		0.8	11.0	2.2		
11	10.9	10.0	0.9		13.0		2.1	90%
12	12.8	10.2	2.6		11.0	1.8		90%
13	10.8	10.0	0.8		7.0	3.8		
14	10.5	10.4	0.1		9.0	1.5		80%

Case Number.	Actual Age. Years.	Binet.			Porteus.			Hæmoglobin.
		Mental Age. Years.	Re-tarded. Years.	Ad-vanced. Years.	Mental Age. Years.	Re-tarded. Years.	Ad-vanced. Years.	
15	11.1	10.4	0.7		11.0	0.1		90%
16	9.7	10.0		0.3	7.0	2.7		80%
17	11.3	11.0	0.3		10.0	1.3		80%
18	8.2	7.8	0.4		10.0		1.8	85%
19	9.4	8.8	0.6		8.0	1.4		80%
20	12.4	12.4			9.0	3.4		85%
21	10.7	10.4	0.3		11.0		0.3	80%
22	12.2	12.6		0.4	12.0	0.2		80%
23	7.2	6.0	1.2		9.0		1.8	
24	8.5	8.0	0.5		8.0	0.5		
25	9.6	8.4	1.2		12.0		2.4	80%
26	12.4	9.4	3.0		11.0	1.4		80%
27	7.1	6.6	0.5		9.0		1.9	
28	13.7	13.5	0.2		7.0	6.7		
29	6.6	6.2	0.4		7.0		0.4	
30	7.0	7.0			7.0			80%
31	10.1	9.8	0.3		11.0		0.9	90%
32	11.2	10.6	0.6		12.0		0.8	
33	13.2	10.8	2.4		9.0	4.2		85%
34	13.2	9.8	3.4	0	9.0	4.2	0	
35	10.2	10.8	0	0.6	7.0	3.2	0	85%
36	7.3	7.6	0	0.3	10.0	0	2.7	90%
37	11.6	10.8	0.8	0	11.0	0.6	0	80%
38	12.0	11.2	0.8	0	11.0	1.0	0	90%
39	11.7	11.4	0.3	0	10.0	1.7	0	90%
40	9.6	9.2	0.4	0	9.0	0.6	0	
41	9.6	7.4	2.2	0	5.0	4.6	0	
42	9.4	9.0	0.4	0	9.0	0.4	0	90%
43	8.1	7.6	0.5	0	7.0	1.1	0	
44	10.5	10.0	0.5	0	9.0	1.5	0	85%
45	10.4	13.0	0	2.6	9.0	1.4	0	90%
46	7.5	8.2	0	0.7	9.0	0	1.5	80%
47	8.8	8.2	0.6	0	13.0	0	4.2	90%
48	7.6	7.2	0.4	0	6.0	1.6	0	
49	7.6	7.0	0.6	0	8.0	0	0.4	80%
50	11.0	9.8	1.2	-0	11.0	0	0	85%
51	12.0	11.2	0.8	0	11.0	1.0	0	90%
52	12.8	12.4	0.4	0	12.0	0.8	0	100%
53	12.7	13.0	0	0.3	13.0	0	0.3	85%
54	9.8	8.8	1.0	0	10.0	0	0.2	75%
55	11.5	13.0	0	1.5	13.0	0	1.5	80%
56	10.4	12.4	0	2.0	13.0	0	2.6	90%
57	11.4	10.4	1.0	0	11.0	0.4	0	90%
58	11.8	10.6	1.2	0	11.0	0.8	0	80%
59	8.6	9.2	0	0.6	9.0	0	0.4	
60	10.6	9.8	0.8	0	7.0	3.6	0	85%
61	11.0	10.0	1.0	0	9.0	2.0	0	80%
62	14.9	15.0	0	0.1	13.0	1.9	0	90%
63	8.7	10.2	0	1.5	10.0	0	1.3	80%
64	12.2	11.2	1.0	0	11.0	1.2	0	
65	11.0	10.2	0.8	0	12.0	0	1.0	
66	10.6	10.0	0.6	0	11.0	0	0.4	
67	6.2	6.0	0.2	0	7.0	0	0.8	
68	8.9	9.6	0	0.7	10.0	0	1.1	
69	9.0	9.0	0	0	9.0	0	0	
70	7.7	8.2	0	0.5	9.0	0	1.3	
71	8.2	8.0	0.2	0	8.0	0.2	0	
72	7.4	7.8	0	0.4	10.0	0	2.6	
73	13.9	14.0	0	0.1	7.0	6.9	0	
74	11.9	11.4	0.5	0	11.0	0.9	0	
75	12.8	12.0	0.8	0	11.0	1.8	0	
76	7.6	8.0	0	0.4	9.0	0	1.4	
77	7.6	7.8	0	0.2	11.0	0	3.4	
78	11.1	11.0	0.1	0	13.0	0	1.9	
79	8.1	8.0	0.1	0	10.0	0	1.9	
80	7.6	7.6	0	0	8.0	0	0.4	
81	9.4	9.0	0.4	0	7.0	2.4	0	
82	7.9	7.0	0.9	0	9.0	0	1.1	
83	6.6	6.6	0	0	7.0	0	0.4	
84	5.6	6.0	0	0.4	7.0	0	1.4	
85	12.1	12.2	0	0.1	10.0	2.1	0	
86	8.4	9.0	0	0.6	9.0	0	0.6	
87	10.2	10.2	0	0	10.0	0.2	0	
88	5.2	5.4	0	0.2	5.0	0.2	0	
89	12.0	11.8	0.2	0	13.0	0	1.0	
90	11.0	10.2	0.8	0	6.0	5.0	0	
91	10.3	10.4	0	0.1	11.0	0	0.7	
92	8.8	8.8	0	0	7.0	1.8	0	
93	7.7	7.8	0	0.1	9.0	0	1.3	
94	12.4	10.8	1.6	0	12.0	0.4	0	
95	8.7	9.2	0	0.5	8.0	0.7	0	
96	6.7	7.0	0	0.3	7.0	0	0.3	
97	8.4	8.2	0.2	0	9.0	0	0.6	
98	10.0	10.2	0	0.2	11.0	0	1.0	
99	13.6	10.2	3.4	0	11.0	2.6	0	

Case Number.	Actual Age. Years.	Binet.			Porteus.			Hæmoglobin.
		Mental Age. Years.	Retarded. Years.	Advanced. Years.	Mental Age. Years.	Retarded. Years.	Advanced. Years.	
100	8.5	8.0	0.5	0	10.0	0	1.5	
101	10.9	10.0	0.9	0	11.0	0	0.1	
102	9.5	10.0	0	0.5	12.0	0	2.5	
103	10.7	9.5	1.2	0	9.0	1.7	0	
104	11.2	10.2	1.0	0	12.0	0	0.8	
105	10.1	10.0	0.1	0	10.0	0.1	0	
106	14.4	10.8	3.6	0	12.0	2.4	0	
107	11.8	12.0	0	0.2	12.0	0	0.2	
108	10.6	9.6	1.0	0	11.0	0	0.4	
109	9.4	9.6	0	0.2	13.0	0	3.6	
110	7.2	7.8	0	0.6	7.0	0.2	0	
111	8.2	7.6	0.6	0	10.0	0	1.8	
112	7.2	8.5	0	1.3	7.0	0.2	0	
113	5.0	6.6	0	1.6	9.0	0	4.0	
114	9.5	9.2	0.3	0	11.0	0	1.5	
115	12.1	5.8	6.3	0	7.0	5.1	0	
116	7.6	9.0	0	1.4	9.0	0	1.4	
		3.9 mo			2.7 mo			85.1%

Five Mental Deficients included, namely:—

Case No. 26 = 3.0 years retarded by Binet  
 Case No. 34 = 3.4 years retarded by Binet  
 Case No. 99 = 3.4 years retarded by Binet  
 Case No. 106 = 3.6 years retarded by Binet  
 Case No. 115 = 6.3 years retarded by Binet  
 = 4.3% of total.

Morons  
 Imbecile

## Light Hookworm Infections.

Case Number.	Actual Age. Years.	Binet.			Porteus.			Hæmoglobin.
		Mental Age. Years.	Retarded. Years.	Advanced. Years.	Mental Age. Years.	Retarded. Years.	Advanced. Years.	
201	9.3	8.2	1.1	0	8.0	1.3	0	80%
202	8.2	7.4	0.8	0	8.0	0.2	0	60%
203	8.4	6.6	1.8	0	7.0	1.4	0	
204	11.0	9.8	1.2	0	13.0	0	2.0	80%
205	10.0	8.8	1.2	0	9.0	1.0	0	85%
206	12.8	10.6	2.2	0	9.0	3.8	0	75%
207	10.2	10.0	0.2	0	11.0	0	0.8	80%
208	13.0	10.4	2.6	0	7.0	6.0	0	
209	8.8	9.0	0	0.2	10.0	0	1.2	65%
210	9.2	9.8	0	0.6	11.0	0	1.8	85%
211	12.7	10.4	2.3	0	12.0	0.7	0	70%
212	10.1	9.8	0.3	0	7.0	3.1	0	80%
213	11.4	10.6	0.8	0	11.0	0.4	0	
214	10.2	9.0	1.2	0	10.0	0.2	0	75%
215	10.3	10.0	0.3	0	13.0	0	2.7	90%
216	13.2	11.4	1.8	0	9.0	4.2	0	70%
217	11.6	9.4	2.2	0	9.0	2.6	0	75%
218	9.8	9.6	0.2	0	9.0	0.8	0	90%
219	9.8	8.8	1.0	0	9.0	0.8	0	80%
220	13.0	12.0	1.0	0	9.0	4.0	0	60%
221	12.3	11.0	1.3	0	11.0	1.3	0	75%
222	10.3	10.2	0.1	0	12.0	0	1.7	85%
223	8.3	9.0	0	0.7	7.0	1.3	0	80%
224	6.6	6.0	0.6	0	7.0	0	0.4	
225	8.4	8.2	0.2	0	9.0	0	0.6	75%
226	10.0	9.8	0.2	0	9.0	1.0	0	
227	7.9	8.0	0	0.1	7.0	0.9	0	85%
228	10.2	8.2	2.0	0	9.0	1.2	0	
229	8.6	8.8	0	0.2	10.0	0	1.4	
230	6.8	6.8	0	0	7.0	0	0.2	
231	10.0	9.4	0.6	0	11.0	0	1.0	80%
232	13.9	12.2	1.7	0	11.0	2.9	0	75%
233	8.9	8.8	0.1	0	11.0	0	2.1	80%
234	13.6	10.0	3.6	0	13.0	0.6	0	70%
235	11.7	9.2	2.5	0	11.0	0.7	0	70%
236	6.7	6.0	0.7	0	8.0	0	1.3	70%
237	10.6	11.0	0	0.4	13.0	0	2.4	85%
238	10.4	10.2	0.2	0	11.0	0	0.6	85%
239	11.8	9.0	2.8	0	11.0	0.8	0	
240	13.3	10.6	2.7	0	11.0	2.3	0	80%
241	7.8	7.6	0.2	0	7.0	0.8	0	75%
242	10.1	9.8	0.3	0	13.0	0	2.9	80%
243	8.5	8.4	0.1	0	9.0	0	0.5	80%
244	6.0	6.0	0	0	7.0	0	1.0	75%

Case Number.	Actual Age. Years.	Binet.			Porteus.			Hæmoglobin.
		Mental Age. Years.	Retarded. Years.	Advanced. Years.	Mental Age. Years.	Retarded. Years.	Advanced. Years.	
245	10.3	9.2	1.1	0	7.0	3.3	0	70%
246	8.2	7.2	1.0	0	7.0	1.2	0	65%
247	7.0	7.8	0	0.8	7.0	0	0	75%
248	11.6	10.6	1.0	0	12.0	0	0.4	75%
249	9.2	9.2	0	0	10.0	0	0.8	70%
250	9.2	9.6	0	0.4	11.0	0	1.8	80%
251	10.2	10.0	0.2	0	11.0	0	0.8	60%
252	8.4	9.0	0	0.6	10.0	0	1.6	70%
253	9.0	7.6	1.4	0	7.0	2.0	0	
254	9.3	10.0	0	0.7	9.0	0.3	0	
255	11.6	10.2	1.4	0	11.0	0.6	0	80%
256	12.2	9.4	2.8	0	11.0	1.2	0	80%
257	9.7	9.0	0.7	0	9.0	0.7	0	80%
258	6.5	5.8	0.7	0	7.0	0	0.5	80%
259	12.0	9.2	2.8	0	9.0	3.0	0	80%
260	10.2	10.0	0.2	0	11.0	0	0.8	
261	10.1	10.4	0	0.3	11.0	0	0.9	
262	6.7	6.4	0.3	0	7.0	0	0.3	
263	11.2	11.0	0.2	0	11.0	0.2	0	
264	7.3	7.4	0	0.1	7.0	0.3	0	
265	9.0	9.2	0	0.2	8.0	1.0	0	
		9.36m.			4.71m.			76.4%

## Heavy Hookworm Infections.

Case Number.	Actual Age. Years.	Binet.			Porteus.			Hæmoglobin.
		Mental Age. Years.	Retarded. Years.	Advanced. Years.	Mental Age. Years.	Retarded. Years.	Advanced. Years.	
401	11.0	8.4	2.6	0	8.0	3.0	0	70%
402	10.6	7.4	3.2	0	8.0	2.6	0	
403	13.0	10.2	2.8	0	9.0	4.0	0	75%
404	12.8	9.4	3.4	0	11.0	1.8	0	70%
405	11.6	8.6	3.0	0	12.0	0	0.4	75%
406	10.0	8.0	2.0	0	8.0	2.0	0	70%
407	8.7	7.4	1.3	0	7.0	1.7	0	70%
408	13.0	10.6	2.4	0	12.0	1.0	0	70%
409	9.0	7.0	2.0	0	6.0	3.0	0	70%
410	12.6	11.0	1.6	0	9.0	3.6	0	80%
411	6.3	6.6	0	0.3	9.0	0	2.7	50%
412	8.6	7.8	0.8	0	5.0	3.6	0	75%
413	8.3	8.8	0	0.5	11.0	0	2.7	80%
414	10.6	7.0	3.6	0	8.0	2.6	0	60%
415	13.5	10.4	3.1	0	11.0	2.5	0	80%
416	11.4	9.2	2.2	0	11.0	0.4	0	75%
417	12.1	9.4	2.7	0	10.0	2.1	0	75%
418	11.1	7.8	3.3	0	8.0	3.1	0	40%
419	9.4	8.0	1.4	0	10.0	0	0.6	70%
420	14.9	9.8	5.1	0	13.0	1.9	0	60%
421	7.0	6.2	0.8	0	6.0	1.0	0	65%
422	13.2	10.2	3.0	0	7.0	6.2	0	70%
423	10.6	6.6	4.0	0	7.0	3.6	0	75%
424	9.6	7.4	2.2	0	5.0	4.6	0	60%
425	12.6	7.4	5.2	0	9.0	3.6	0	60%
426	10.4	7.8	2.6	0	6.0	4.4	0	75%
427	8.6	7.4	1.2	0	7.0	1.6	0	50%
428	10.4	8.4	2.0	0	10.0	0.4	0	
429	9.2	9.6	0	0.4	10.0	0	0.8	65%
430	12.7	9.0	3.7	0	9.0	3.7	0	80%
431	12.3	7.8	4.5	0	9.0	3.3	0	80%
432	11.3	9.0	2.3	0	13.0	0	1.7	75%
433	8.5	7.6	0.9	0	7.0	1.5	0	70%
434	9.8	7.6	2.2	0	10.0	0	0.2	70%
435	9.7	5.6	4.1	0	6.0	3.7	0	70%
436	13.4	10.6	2.8	0	9.0	4.4	0	70%
437	11.6	7.6	4.0	0	9.0	2.6	0	75%
438	11.0	9.2	1.8	0	9.0	2.0	0	75%
439	12.2	10.4	1.8	0	10.0	2.2	0	
440	10.4	8.2	2.2	0	9.0	1.4	0	70%
441	11.6	9.4	2.2	0	10.0	1.6	0	70%
442	10.2	7.8	2.4	0	10.0	0.2	0	75%
443	11.3	7.4	3.9	0	9.0	2.3	0	70%
444	15.0	12.6	2.4	0	11.0	4.0	0	70%
445	8.8	7.0	1.8	0	5.0	3.8	0	70%
446	11.6	8.2	3.4	0	10.0	1.6	0	75%
447	6.2	5.8	0.4	0	9.0	0	2.8	70%
448	9.6	8.2	1.4	0	7.0	2.6	0	60%
449	10.1	8.8	1.3	0	10.0	0.1	0	80%
450	14.9	9.8	5.1	0	10.0	4.9	0	70%

Case Number.	Actual Age. Years.	Binet.			Porteus.			Hæmoglobin.		
		Mental Age. Years.	Re-tarded. Years.	Ad-vanced. Years.	Mental Age. Years.	Re-tarded. Years.	Ad-vanced. Years.			
451	12.6	8.2	4.4	0	12.0	0.6	0	75%		
452	10.1	9.6	0.5	0	8.0	2.1	0	80%		
453	12.8	9.4	3.4	0	8.0	4.8	0			
454	10.3	9.4	0.9	0	8.0	2.3	0			
455	11.7	9.8	1.9	0	11.0	0.7	0			
456	13.8	10.4	3.4	0	9.0	4.8	0			
457	11.2	9.6	1.6	0	13.0	0	1.8			
458	13.5	10.6	2.9	0	11.0	2.5	0			
459	11.0	9.2	1.8	0	10.0	1.0	0	70%		
460	9.8	8.0	1.8	0	9.0	0.8	0			
461	10.8	8.4	2.4	0	9.0	1.8	0	70%		
462	7.5	6.6	0.9	0	7.0	0.5	0			
463	10.0	8.8	1.2	0	9.0	1.0	0			
464	12.5	9.2	3.3	0	9.0	3.5	0			
465	13.1	10.0	3.1	0	11.0	2.1	0	70%		
466	11.2	9.2	2.0	0	8.0	3.2	0			
467	9.7	7.4	2.3	0	10.0	0	0.3			
468	7.4	6.4	1.0	0	7.0	0.4	0			
469	8.1	7.0	1.1	0	7.0	1.1	0	70%		
470	6.9	5.4	1.5	0	5.0	1.9	0	50%		
471	9.5	9.6	0	0.1	9.0	0.5	0	65%		
472	8.1	8.2	0	0.1	7.0	1.1	0			
473	13.2	10.2	3.0	0	13.0	0.2	0			
474	11.2	9.4	1.8	0	8.0	3.2	0	80%		
475	5.5	6.0	0	0.5	5.0	0.5	0			
476	8.7	7.6	1.1	0	7.0	1.7	0	75%		
477	10.1	8.8	1.3	0	10.0	0.1	0			
478	9.8	7.2	2.6	0	7.0	2.8	0			
479	7.4	6.0	1.4	0	8.0	0	0.6			
480	11.6	9.6	2.0	0	8.0	3.6	0			
481	6.6	5.6	1.0	0	5.0	1.6	0			
482	9.0	5.6	3.4	0	7.0	2.0	0			
483	14.3	10.0	4.3	0	9.0	5.3	0	60%		
484	9.6	8.0	1.6	0	8.0	1.6	0	60%		
485	13.7	9.4	4.3	0	10.0	3.7	0	65%		
486	11.2	11.0	0.2	0	10.0	1.2	0	80%		
487	8.1	7.4	0.7	0	7.0	1.1	0	70%		
488	8.0	7.2	0.8	0	9.0	0	1.0	60%		
489	8.5	7.8	0.7	0	10.0	0	1.5	70%		
490	11.3	10.6	0.7	0	11.0	0.3	0	75%		
491	13.4	10.4	3.0	0	11.0	2.4	0	70%		
492	9.5	10.0	0	0.5	12.0	0	2.5	75%		
493	6.0	5.8	0.2	0	9.0	0	3.0			
494	11.9	9.2	2.7	0	10.0	1.9	0			
495	13.3	8.2	5.1	0	13.0	1.3	0	70%		
496	9.6	9.4	0.2	0	7.0	2.6	0	75%		
497	7.1	5.2	1.9	0	7.0	0.1	0	70%		
498	12.5	10.2	2.3	0	11.0	1.5	0	75%		
499	8.6	7.0	1.6	0	9.0	0	0.4	70%		
500	11.2	9.2	2.0	0	12.0	0	0.8	60%		
501	10.0	7.2	2.8	0	7.0	3.0	0	85%		
502	11.6	10.0	1.6	0	13.0	0	1.4	70%		
503	11.4	9.0	2.8	0	12.0	0	0.2	80%		
504	12.2	10.0	2.2	0	11.0	1.2	0			
505	9.6	8.6	1.0	0	9.0	0.6	0	80%		
506	7.5	6.8	0.7	0	7.0	0.5	0	70%		
507	9.9	9.0	0.9	0	10.0	0	0.1	75%		
508	12.0	10.6	1.4	0	9.0	3.0	0	80%		
509	14.0	13.0	1.0	0	13.0	1.0	0			
510	12.5	9.8	2.7	0	10.0	2.5	0			
511	10.2	9.0	1.2	0	11.0	0	0.8			
512	9.7	7.2	2.5	0	9.0	0.7	0			
513	8.0	6.4	1.6	0	9.0	0	1.0			
514	8.2	7.6	0.6	0	7.0	1.2	0			
515	10.0	9.0	1.0	0	8.0	2.0	0			
516	14.2	9.8	4.4	0	10.0	4.2	0			
517	14.0	10.8	3.2	0	11.0	3.0	0	65%		
518	9.0	8.8	0.2	0	9.0	0	0	70%		
519	12.7	10.6	2.1	0	12.0	0.7	0	70%		
520	12.5	10.6	1.9	0	11.0	1.5	0	80%		
521	10.2	9.2	1.0	0	9.0	1.2	0	75%		
522	11.3	9.2	2.1	0	7.0	4.3	0	60%		
523	7.6	6.8	0.8	0	9.0	0	1.4	70%		
524	9.5	9.2	0.3	0	9.0	0.5	0	75%		
525	13.0	9.6	3.4	0	10.0	3.0	0			
526	11.0	9.8	1.2	0	9.0	2.0	0	65%		
527	7.2	5.8	1.4	0	9.0	0	1.8	80%		
528	13.7	10.0	3.7	0	12.0	1.7	0			
529	15.1	9.6	5.5	0	10.0	5.1	0	60%		
530	11.4	9.6	1.8	0	10.0	1.4	0	80%		
531	10.2	9.0	1.2	0	11.0	0	0.8	80%		
532	11.2	10.2	1.0	0	9.0	2.2	0			
533	12.6	10.4	2.2	0	11.0	1.6	0	75%		
534	12.8	10.6	2.2	0	11.0	1.8	0			
535	9.0	9.2	0	0.2	9.0	0	0	70%		

Case Number.	Actual Age. Years.	Mental Age. Years.	Re-tarded. Years.	Ad-vanced. Years.	Mental Age. Years.	Re-tarded. Years.	Ad-vanced. Years.	Hæmoglobin.
536	13.3	10.2	3.1	0	12.0	1.3	0	80%
537	5.2	5.2	0	0	6.0	0	0.8	70%
538	6.0	5.6	0.4	0	7.0	0	1.0	70%
539	9.3	8.4	0.9	0	11.0	0	1.7	80%
540	8.8	8.2	0.6	0	11.0	0	2.2	
541	14.0	9.8	4.2	0	12.0	2.0	0	
542	9.4	9.6	0	0.2	11.0	0	1.6	
543	11.8	11.0	0.8	0	11.0	0.8	0	
544	9.0	8.2	0.8	0	9.0	0	0	
545	7.2	7.2	0	0	7.0	0.2	0	
546	7.6	8.2	0	0.6	7.0	0.6	0	
547	10.2	9.2	1.0	0	10.0	0.2	0	
548	11.0	7.0	4.0	0	9.0	2.0	0	
549	13.2	10.0	3.2	0	12.0	1.2	0	
550	10.0	8.8	1.2	0	9.0	1.0	0	
551	9.8	7.4	2.4	0	11.0	0	1.2	
552	9.0	8.2	0.8	0	10.0	0	1.0	80%
553	8.8	8.0	0.8	0	10.0	0	1.2	
554	12.7	9.0	3.7	0	7.0	5.7	0	
555	10.6	8.4	2.2	0	9.0	1.6	0	
556	9.2	8.0	1.2	0	7.0	2.2	0	
557	8.6	8.0	0.6	0	11.0	0	2.4	
558	12.1	9.4	2.7	0	11.0	1.1	0	
559	12.2	9.4	2.8	0	10.0	2.2	0	
		23.4m.			16.0m.			70.9%

## PITFALLS OF PREGNANCY.

By Edward Ludowici, M.B. (Syd.),  
Sydney.

One of the important conditions which suggests itself when a female patient presents herself to a doctor, is that of pregnancy. No matter what the symptoms are that she complains of, it is necessary to be satisfied on this point.

Pain in the region of the uterus or appendages is not an unusual symptom of early pregnancy and, indeed, may be one of the earliest symptoms. A woman may complain of pelvic pain, possibly, even of leucorrhœa, asseverate that the menstrual function is regular and not overdue. Bimanual examination may show nothing very definitely abnormal, or may reveal some irregularity of the uterine contour; what is more common than to suggest an anæsthetic, and incidentally operation, such as curettage, if necessary, while she is under it? Well and good, if she agrees, for you will then ascertain if she is pregnant or not. On the hand, after some natural delay she may be persuaded to get another opinion, with the result that she is told that she is pregnant. Of course, by then the diagnosis has become easy, owing to lapse of time, but the patient is not likely to make allowances for a mistake on the part of her first attendant. Such a mistake is not so likely, although it might happen, in the case of a woman who knows she is pregnant and makes false statements in order to be curetted, for she has lost time by taking drugs, etc., in a vain endeavour to rid herself of the fœtus, thus permitting enlargement of the uterus sufficient to make her condition plain. The moral is to bear in mind the possibility of pregnancy even in cases the most unlikely.

Pregnancy may supervene whilst waiting for an operation. I well remember from long ago a case of



a patient with a torn cervix. She entered hospital about three weeks after having been examined, and was thoroughly curetted and the cervix repaired by an esteemed colleague, and had an uneventful convalescence. Some weeks afterwards I was called in to treat her for an incomplete abortion. It was quite evident that the impregnated ovum had been concealed in the tube at the time of operation. Had I not been present at the operation I should have been very sceptical as to the curettage: it was a little difficult to explain the state of affairs to the patient and her husband.

A full bladder, causing retro-displacement of the uterus, is a common source of error in diagnosis, therefore it is a good plan whilst your patient is undressing, to ask her to urinate. If you have no dressing room, leave the consulting room for a little. By securing an empty bladder you eliminate one source of error, and you are also able to make a test of the urine, without which no examination can be complete. On the other hand, a retroverted pregnant uterus can cause great retention by pressure of the cervix on the urethra and the neck of the bladder. I confess that one of the things I always try to carry in my pocket is a short metal catheter; it has been the means on several occasions of saving an extra trip of some miles, late at night.

In testing urine of pregnant women, sometimes a substance reducing Fehling's solution is found. It is usually lactose, and no notice may be taken of the circumstance in the absence of special symptoms. The limited space will not permit discussion of the toxæmias on this occasion.

Estimation of the probable date of onset of labour is next in importance to the determination of the condition of pregnancy. It is not uncommon for a woman to be rather hazy as to the date of her last menstrual period. An error in dates may cause you to be absent at the time of the confinement. Therefore, and especially if dates are doubtful, you should see the patient at intervals of one to two months in the first seven months and then every few weeks afterwards. By the size of the uterus you can check the calculation as to the date of delivery. You can also demonstrate to the patient that you have taken every care, and if the onset of labour is delayed, it is not your fault. It is very disagreeable to have a hard earned holiday spoiled by the thought that the patient feels that you have deserted her, or to be blamed because the nurse has been waiting on the patient for several weeks.

These examinations afford other information. Perhaps in a primigravida, when you first measure the pelvis you may be alarmed to find that it is under size. Later on you will generally find that the measurements have increased so as to allow the prospect of natural delivery. If not, you are in a position to advise induction of premature labour, with satisfactory results to mother and child. This is a case where pelvimetry pays. Likewise, by timely intervention, you will avoid a case of difficult labour, such as occurs in allowing pregnancy to proceed for some time after due date of delivery, and the fœtus to become too large for the normal pelvis. The delivery of a post-mature fœtus is fraught with danger to both mother and child.

Other advantages of regular supervision are that you can control the regime and habits of the patient, detect hyperemesis, heart trouble, venereal disorders, tumours of various kinds, pyelitis, albuminuria, the warning signs of eclampsia and other toxæmias, correct indigestion, sleeplessness, nervous symptoms, various pressure effects, such as varicose veins and irritation of the vulva. In fact, you can lighten the whole burden of pregnancy, and teach her that many of the discomforts which she thinks are the unavoidable consequences of her state, are really avoidable. You may detect the death of the fœtus or a case of pseudo-cyesis, preventing yourself from being placed in the false position of having accepted a fee or part of it beforehand, and having allowed the patient all the trouble of preparing for confinement that will not take place.

Pseudo-cyesis or simulation of pregnancy is a peculiar condition of abdominal distension, which occurs generally in neurotic women who desire to have a child, and who are near the menopause. When the expected time of labour arrives, the patient has contractions of the recti muscles, which greatly resemble uterine contractions, and may deceive the nurse, who perhaps, being the sole attendant in the case, and anxious at the non-arrival of the child, sends for medical aid. The diagnosis is easy.

You also become aware of a transverse lie, which can be corrected permanently by timely manipulation. If this is unsuccessful you know that premature labour is to be expected, and when a message comes from the patient that haste on your part is necessary.

Occipito-posterior positions are a common cause of delay in labour. If suspected beforehand, you can instruct the nurse not to wait too long in sending for you, for, by means of an anæsthetic and combined vaginal and abdominal manipulation, you can convert the position to an anterior one, and save the patient a long and painful labour.

The state of the patient and history of former labour are useful to remember. In two cases where I travelled over sixty miles in the middle of the night, I was impelled to do so by my knowledge of the condition and previous history of my patients. The first case was a transverse lie, which always recurred after reposition. The former infant had died shortly before birth. The labour began prematurely, with rupture of membranes. When I arrived, after some hours' drive, the patient and nurse were sleeping comfortably. I instructed them to go early to a private hospital, where labour restarted. An arm prolapsed, but there was sufficient dilatation to enable me to turn. Delivery proceeded without undue haste, but considerable difficulty occurred in extraction of the after-coming head through the cervix. This was finally managed by a "combined method," consisting of traction on the face by one hand passed through the cervix, with the other hand grasping the legs just above the ankles. It is really a combination of Smellie's and the Prague method, and is one which is very useful when the head is impacted, or the neck gripped by the cervix. The aid of an anæsthetist, who afterwards restored the baby by artificial respiration, whilst my attention was directed to the mother, and of the midwifery nurse assisted by ample



help from the hospital staff, was indispensable; without considerable assistance there is no doubt the baby would have died.

The other woman gave a history of the preceding baby born apparently normal, dying in a state of asphyxia some hours afterwards.

On this occasion the baby was born under the supervision of a fellow practitioner just before my arrival, breathed well and appeared quite normal. About half an hour afterwards, when the nurse took it up and put it in the bath its colour was quite good. During the process I noticed that it became blue with absence of respiratory movement. It was lifted from the bath, and prompt measures taken to restore its colour and breathing by artificial respiration and oxygen. It had sluggish respiration, and occasional attacks of blueness for thirty-six hours, necessitating constant attention. At the present time it is a very strong healthy child. The mother stated that the previous baby had become blue in much the same way, but had not recovered.

It is not possible to refer at length to the important antepartum hæmorrhages, except to mention a case which occurred in the last days of pregnancy, due to partial separation of the normally situated placenta, *viz.*, accidental hæmorrhage.

In the light of previous experiences of expectant treatment, Cæsarean section was done, and the cause of the detachment found to be due to the cord being coiled around the child's neck. When the head and shoulders were driven slightly down by painless uterine contractions, this became short enough to pull on and partly to detach the placenta. Both mother and child did well. In this case by following expectant treatment, the mother, as well as the child, would have died.

As regards placenta prævia, it should be noted that the cervix, if not much dilated, is nevertheless easily dilatable. The few cases cited illustrate the old axiom "Forewarned is forearmed."

It is not possible in the space allotted to go fully into many of the conditions associated with pregnancy. We all realize in the obstetric domain, as in other domains, that the more we get to know of our subject, the more we understand the difficulties. It is a subject which is not only an intensely practical one, but also of immense sociological importance. Those who teach it in the hospitals, should have a status similar to that accorded to other teachers in the domain of medical studies.

The necessity of more fully equipping the medical student with an adequate knowledge of this subject may become recognized in time, and when the small amount of attention, which is allowed to be devoted to the practical acquirement of this very important branch of medical and social science, is considered, we can only marvel that the disabilities from which women suffer as the result of pregnancy and child birth are not greater, and that the maternal and infantile mortality is not heavier.

## Reviews.

### THE CAUSE OF CANCER.

Up to the present the study of the aetiology of malignant disease has been of a highly speculative kind, and has carried with it but little conviction. Numerous investigators have dared to proclaim that they have discovered the cause of the disease or diseases. The majority of them have adopted methods more acceptable to theology than to scientific medicine, and their theories appeal rather to the credulity of their readers than to the force of logical argument. A few have made rational hypotheses, and have endeavoured to test the correctness of their deductions by inductive argument. Unfortunately, the whole superstructure of these theories can be pushed over by the simple expedient of requiring proof for the existence of the alleged pathological process or causative agent. Dr. D'Este Emery has recently entered into this field of speculation, and has taken up the fight in favour of a parasitic causation of malignant neoplasms.<sup>1</sup> His arguments are excellent as far as they go. The fundamental defect lies in the fact that, unlike Sjöbring, Doyen and many others, he has no parasite to demonstrate. He satisfies himself by assuming that the micro-organism must be ultra-microscopical, that is, less than one-tenth of a micron in diameter. His book is interesting to read, even if the student gains from its perusal the false impression that the author is a very quarrelsome individual, who regards his opponents with intolerance. He attaches much importance to the arguments put forward in opposition to the parasitic theory, and finds on their examination that he is able to supply a plausible rejoinder. But it has to be admitted that he proves nothing and scarcely convinces his reader of the probable truth of his contentions. Judged calmly and in a cold, critical manner, we are forced to the conclusion that Dr. Emery had added but little knowledge to the subject he so pluckily attacks and that the causation of cancer is still unproven.

A very different class of book is that written by Dr. Duncan Bulkley, who not only claims to have discovered the cause of cancer, but makes the astounding assertion that he can cure it.<sup>2</sup> We have dealt some time ago with the first volume of this book. The many antagonistic opinions expressed in the majority of medical journals has impelled the author to attempt to justify his position. His extravagant claims and his unsupported assertions fall as completely now as they did when he first foisted his views on the medical world. The strange part of the book is that the author displays much knowledge of the clinical and some of the pathological characters of malignant disease. It would seem as if he had started on a safe road in his investigations, but, unfortunately, his training as a bio-chemist does not suffice to steer him far along a highly difficult path. We may quote one statement given early in the book to demonstrate that his chemical speculations are not even ingenious. "The blood in advanced cancer manifests changes which indicate vital alterations in the action of the organs which form blood and control the nutrition of the body and its cells." Nowhere in either volume does he adduce a single chemical fact on which he could base this contention, and from the arguments adopted it is quite clear that the alleged changes in the organ chemistry have been assumed and not laboriously studied. The work of Freund has thrown some light on the modifications in the cell metabolism, but even these facts are insufficient to enable us to understand what these chemical changes mean. Bulkley believes that the augmentation in the consumption of meat, coffee and alcoholic beverages is coincident with and parallel to the greater augmentation of the mortality from cancer. The following sentence appears to summarize the author's views: "We must, therefore, accept the fact that cancer has very close relations to the elaboration of protein in the system, and the rational deduction of this is that an over-consumption of nitrogenous food has something, if not everything, to do with the production of cancer." A patient reader is required to wade through 270 pages of this kind of matter.

<sup>1</sup> Tumours, Their Nature and Causation, by W. D'Este Emery, M.D., R.Sc.; 1918. London: H. K. Lewis & Company, Limited; Crown 8vo., pp. 166. Price, 15s. net.

<sup>2</sup> Cancer, Its Cause and Treatment, by L. Duncan Bulkley, A.M., M.D.; Volume II., 1917. New York: Paul B. Hoeber; Crown 8vo., pp. 282. Price, \$1.50 net.

## The Medical Journal of Australia.

SATURDAY, JANUARY 4, 1919.

### The New Year.

With the dawn of the year nineteen hundred and nineteen our thoughts naturally turn to the other side of the world, where there are still many members of the medical profession wearing the uniform of our King, their duty still unfinished, and to the last resting-place of those who have completed their duty to the Empire, unflinchingly, heroically, splendidly. Those who could have gone and did not, will never have another chance. They can never make good that defect. Those who stayed behind for valid reasons of a necessity must be prepared to step aside for their superiors who went. We owe it to our dead colleagues, the men who faced and met death at duty's call, that we shall never forget Gallipoli, France, Flanders, Palestine, Egypt and Mesopotamia. In 1914 the British Medical Association in Australia pledged itself to safeguard the interests of those who left their practices to help our fighting armies. The day of reckoning has come, and the debt has now to be paid. It is incumbent on us to see that every returned man has a fair deal on his return, and that he should have preference shown him when he seeks a position of importance. These men have made sacrifice far greater than the majority realize. It is now necessary for the others to make a small sacrifice, and to step aside, cap in hand, until the last of our returned men has been re-established. Some who stayed at home no doubt found it lucrative. They will be called upon to dip their hands deep into their pockets to provide ample funds for the relief of our colleagues who may find difficulty in re-establishing themselves in practice, for those who have been partially or wholly incapacitated, and for the dependants of those who have paid the full price of patriotism. This fund will soon be started, and the least that the men who have not been abroad, can do is to contribute sums that will cause them pecuniary embarrassment for the moment. It is little enough. On January 1, 1919, we raise our hats

to the members of the Australian Army Medical Corps on active service and to the members of the Naval Medical Service.

### A RETROGRADE STEP.

The Tasmanian Government has secured the passage of a measure for the purpose of legalizing the registration of one man and of making provision for the continuation of political mode of administration of two public hospitals. The *Medical Act, 1918*, is as mischievous a piece of legislation as could well be devised, and, in addition, has no further justification for its introduction than the intention of the Government to widen the breach between itself and the medical profession. We have called attention to the fact that its most objectionable provision is contained in the third schedule which gives the right of registration to a person holding a certificate or licence of an American State Board, issued after the holder has passed through a course of medical study of not less than four years' duration at a medical college rated as Class "A" by the Council of Medical Education of the American Medical Association and of having obtained after due examination a diploma or degree from the medical college. This means a lowering of the status of the medical profession. There is ample evidence that the medical profession in America possesses many highly-trained and efficient practitioners, but, at the same time, every American will admit that the standard is extremely variable. The first-class men are unlikely to leave their country, except to take up positions of large importance. Tasmania has none to offer. Those who may be tempted to listen to the call of the Government, in opposition to the resolution of the British Medical Association, will be derelicts, the failures and the undesirables. Each country has an abundance of citizens of this class, and they form the floating population in every sphere of life. The new Act offers to these little reputable individuals what in practice may amount to Governmental protection. In the short debate in the Legislative Council the Honorary Minister admitted that it would be idle to dissociate the Bill from the "trouble" that had arisen in connexion with the Tasmanian Branch of the British Medical Association. The Government has formulated a policy

in regard to the admission of patients into the hospitals. No self-respecting member of the medical profession could be party to this arrangement. It means that the medical officers giving honorary service would be required to attend free of charge well-to-do patients without fee, while the Government charged for these services. The Government, therefore, imported into the two general hospitals a number of medical practitioners who were prepared to ignore the resolutions of the British Medical Association throughout the Empire and of the Australasian Medical Congress. It seems that the Tasmanian Government has recognized that the British Medical Association will not recede from its principles, and that, unless some modification were introduced into the programme of hospital administration, the Government would look in vain to the British Medical Association for medical officers. Hence the new Act was introduced, so that foreign practitioners might be admitted to Tasmania to fill any posts that might become vacant on the staffs of the hospitals. It is scarcely necessary for us to state in unambiguous terms that the policy of the British Medical Association in regard to medical registration of foreign graduates is that any agreement introduced must be based on full reciprocity.

There is one other matter in the Act which calls for comment. Clause 3 provides for the setting up of a Medical Council of not less than five and not more than nine members. The Premier resisted a suggested amendment by Mr. Lyons to fix the number of members at nine. The Premier stated that he would like to see the "doctors on the other side" on the Council. This statement is characteristic of the leader of a Government that has not hesitated to use any means to perpetuate the differences between the British Medical Association and Parliament. There is no doubt that the Act has been framed so that its administration can be conducted without any assistance from the medical profession. The Premier has disclosed some of his fears by announcing that he proposed to prevent the Medical Council from removing the name of a practitioner from the register because he did something that was contrary to their wishes, such as serving on the staff of a public hospital. Clause 12 enables the Council to remove the name of a practitioner if he be judged guilty of infamous con-

duct in a professional respect. To this the Premier has added that it would not be lawful for the Council to strike the name off the register because a practitioner continued or became a member of the staff at either or the two general hospitals. A very little knowledge would have made the Premier aware that "infamous conduct in a professional respect" has long since become defined and accepted in the Courts of Law. The definition has arisen from the practice of the General Medical Council, a statutory body under the Privy Council, and conduct so defined does not depend on the ideas or wishes of a small set of medical practitioners. This matter, however, is of small importance. The Tasmanian *Medical Act* has lowered the standard, and nothing short of its repeal will remove the danger in which the people of the island are now placed.

#### THE INCIDENCE AND MORTALITY OF PNEUMONIC INFLUENZA.

Public taste can always be measured by the manner in which it is gratified in the public press. The inaccuracy of the ordinary reports on medical matters in daily newspapers is notorious to the medical profession, but if allowance be made for the fact that the accounts are written for a public that is little moved by plain, unvarnished truth, or by stories unsavouried by harrowing details, it is readily understood why they take the form of gross exaggeration. It is the same in every part of the world. In England during the months of September and October the newspaper accounts of the influenza epidemic were just as unreliable as the alleged news arriving now from America, South Africa and New Zealand. Of the political statements and announcements concerning influenza in the Commonwealth the less said the better, for Australia is fortunate in possessing a highly efficient Quarantine Service, which has succeeded in excluding the disease. This success has not been dependent on good fortune, but is the direct result of the stringent measures of isolation and careful supervision. Whether vaccination has contributed to the control of the disease is extremely doubtful, for, as Professor Chapman has recently pointed out in these columns, there is no scientific evidence that an immunity to the influenza bacillus can be produced. The spraying of the fauces with zinc sulphate solution may have borne some fruit, although we need more definite evidence than is at present available to assess its value accurately. Of masks strange things have been expected.

It has recently been announced that the total number of deaths during the pandemic amounts to 6,000,000. The source of this figure has not been divulged. Unfortunately, we are not in possession of any reliable compilation, giving the approximate incidence or mortality of this disease. A few facts

garnered from odd sources, however, are strongly suggestive that the large number quoted above is a very wild guess. It is known that the epidemic appeared first in Spain, then in Switzerland and Italy, and then in Austria and Germany. We learn that A. Dietrich, writing in the *Münchener medizinische Wochenschrift* of August 20, 1918, gives an account of the pathological and bacteriological work undertaken in an undivulged section of the fighting front. He states emphatically that the incidence was very high, that the infection was great, but that the mortality was extremely low. He was only able to have access to 40 bodies of soldiers dead of influenza, and in 22 of them the cause of death was chronic tuberculosis, while other pre-existing serious pathological conditions, such as severe wounds of vital organs, malaria, chronic endocarditis, etc., were discovered in other cases. This observer found that the influenza bacillus invaded the finest bronchioles and alveoli, but owing to the fragile habit of this organism isolation was not always successful. In London the official records reveal 1,600 to 1,700 deaths during a period of seven weeks, at the height of the epidemic.

From September 13 to October 12, 1918, the total number of cases recorded by the United States Census Bureau was 216,186. By the end of the month the epidemic had almost disappeared from the United States of America. It is therefore not unreasonable to assume that the whole epidemic in that country affected not more than 350,000 persons. The mortality was highest in Philadelphia, where it reached just over 20% at the height of the epidemic. The mortality in New York was 6.6%. From these figures we are justified in assuming that the incidence of the disease in the United States was something in the region of 0.3% of the population, and the mortality 3 per 10,000 persons living. The case mortality is taken at about 10%.

While popular report tells us of thousands of deaths in New Zealand, attention should be directed to the official returns issued by the Department of Public Health, Hospitals and Charitable Aid (see *The Medical Journal of Australia*, December 21, 1918, p. 524). From these returns it will be noted that during the four weeks ending December 2, 1918, 2,458 cases were recorded in three of the four health districts. Even if the figures for Auckland were as numerous as those in the rest of New Zealand, the total number of cases would be under 5,000. Assuming the mortality to have been as high as that recorded in Philadelphia, the number of deaths would remain very far below that commonly reported. The official returns will be awaited with considerable interest.

It will thus be seen that imagination must have played a large part in the formulation of the tremendous figure of 6,000,000 deaths. There is apparently no justification to speak of a plague, or to compare the outbreak with those of the great historical visitations. The pandemic is, however, a serious one, and had Dr. Cumpston and his quarantine officers left a single escape for the infection to creep in, Australia would probably have been faced with an alarming epidemic. It is not unreasonable to base an estimate of the extent of what might have occurred on the American figures. Translating the figures to the Australian

population, there might have been 23,000 cases and anything between 2,000 and 2,500 deaths—an extremely serious position.

## Public Health.

### VICTORIA.

The following notifications have been received by the Department of Public Health, Victoria, during the week ending December 22, 1918:—

	Metro- politan. Cs. Dths.	Rest of State. Cs. Dths.	Total Cs. Dths.
Enteric Fever..	1 1	7 0	8 1
Scarlatina..	15 0	16 0	31 0
Diphtheria..	48 0	47 0	95 0
Pulmonary Tuberculosis	13 7	12 4	25 11
C'bro-Spinal Meningitis	0	2	2
Puerperal Fever	0	2	2

### SOUTH AUSTRALIA.

The following notifications have been received by the Central Board of Health, Adelaide, during the fortnight ending December 14, 1918:—

	Adelaide. Cs. Dths.	Rest of State. Cs. Dths.	Total Cs. Dths.
Enteric Fever..	0 0	8 0	8 0
Scarlatina..	0 0	43 0	43 0
Diphtheria..	9 2	55 0	64 2
Pulmonary Tuberculosis	2 9	16 9	18 18
Erysipelas..	1 0	7 0	8 0
Morbili..	4 0	74 0	78 0
Pertussis..	6 0	51 1	57 1
Bilharziosis	0 0	1 0	1 0
C'bro-Spinal Meningitis	0 1	0 0	0 1

### WESTERN AUSTRALIA.

The following notifications have been received by the Department of Public Health, Western Australia, during the week ending December 14, 1918:—

	Metro- politan. Cases.	Rest of State. Cases.	Totals. Cases.
Enteric Fever..	12	1	13
Scarlatina..	5	11	16
Diphtheria..	9	11	20
Pulmonary Tuberculosis	6	4	10
Erysipelas..	1	0	1
Cerebro-Spinal Meningitis	1	0	1

### TASMANIA.

The following notifications have been received by the Department of Public Health, Tasmania, during the week ending December 21, 1918:—

Diseases.	Hobart. Cases.	Launceston. Cases.	Country. Cases.	Whole State. Cases.
Enteric Fever..	0	0	2	2
Scarlatina..	0	0	1	1
Diphtheria..	2	2	3	7
Pulmonary Tuberculosis	3	1	5	9
Puerperal Fever	0	0	1	1

Dr. Lillian Violet Cooper, of Brisbane, has had conferred upon her by the King of Serbia the insignia of the Fourth Class of the Order of St. Sava, in recognition of her valuable services as Surgeon at the Scottish Women's Hospital at Ostrovo during the war. Permission has been given the recipient to wear the insignia.

Dr. J. H. Walte has resigned his position of Director of the International Health Board conducting the hookworm campaign in North Queensland, owing to ill-health. Dr. L. W. Lambert will act in his stead.



## Abstracts from Current Medical Literature.

### THERAPEUTICS.

#### (1) Serum Treatment of Pneumonic Influenza.

L. H. Spooner, A. W. Sellards and J. H. Wyman (*Journ. Amer. Med. Association*, October 19, 1918) have tested the use of an antiserum against pneumonia due to Type I. pneumococci, occurring in association with an epidemic of influenza. The study was made in connexion with an epidemic which had passed through Camp Devens, upon which much bacteriological investigation had been carried out. The *Bacillus influenzae* was the ætiological factor of this epidemic. As the number of cases increased, pneumonia became very prevalent. In a small number of these pneumonic cases the *Bacillus influenzae* alone was present. In 20% of the patients Type I. pneumococci were found in the sputum. Blood cultures made during life showed the same type of pneumococcus in eight cases. Before the epidemic a serum of low titre had been used in the treatment of patients suffering from acute lobar pneumonia due to Type I. pneumococci. Of twenty-four patients so treated, nineteen recovered and five died. During the epidemic 54 patients received the serum with essentially the same treatment, of whom 23 died. With another serum of higher titre 15 patients were treated, of whom 14 recovered. The authors conclude that the mortality of patients treated with serum of low titre during the course of the illness or during the last stages only was approximately double that of patients similarly treated before the epidemic, and that patients treated with a high titre serum during the whole course of the illness showed a mortality of 7%.

#### (2) Serum Treatment of Pneumonic Influenza.

L. W. McGuire and W. R. Redden discuss the use of human serum from convalescent patients in the treatment of pneumonia following upon influenza of the epidemic variety (*Journ. Amer. Med. Association*, October 19, 1918). In the Naval Hospital at Chelsea, Mass., the deaths have been due to the pneumonic complications rather than to the influenza attack. In the first series of cases the mortality among those patients developing pneumonia reached as high as 60%, but later the mortality dropped to 30%. The authors record the results of the treatment of a small group of patients by the use of serum obtained from those persons convalescent from pneumonia following an attack of influenza. The observation and treatment of more than 400 persons affected with pneumonia secondary to influenza have afforded opportunity for comparing different methods of treatment with some degree of accuracy. Thirty-seven persons in all have been treated with the sera of convalescent patients. Of this group 30 have recovered, one has died and six are still under treatment. The convalescent pa-

tients have been bled within a week or ten days of the temperature reaching normal. The serum has been given as soon as the diagnosis of pneumonia is made. The dose of serum has varied from 75 c.cm. to 125 c.cm., and the interval between doses has varied from 8 to 16 hours. The treatment has been continued until there has been no doubt of the recovery of the patient. Most patients have received about 300 c.cm., but three received only 100 c.cm. and two received over 600 c.cm.. There has been a marked difference in the potency of the convalescent sera. At least 10 out of 70 sera had no influence upon the patients. Under these conditions the succeeding doses of serum have been from other persons. When no results had been obtained in the first twenty-four hours after use, serum has been obtained from another donor. Wassermann tests have been made on all persons supplying drugs. Compatibility tests of the sera with the blood corpuscles of patients have been performed as each new case entered the wards. The amount of blood taken from the patients has been 800 c.cm., 400 c.cm. being removed under sterile precautions on two successive days. Each donor has thus yielded 300 c.cm. serum. The following history shows the effect of administration. A man showed some evidence of broncho-pneumonia three days after developing influenza. Two days later the patient was desperately ill, the temperature being 40.2° C., the respirations 36 and the pulse 104. He received 200 c.cm. serum in two doses. In twenty-four hours the patient was distinctly improved, and after another injection the temperature became normal, the respirations 30 and the pulse 88. The patient made an uneventful recovery. The sputum, injected into the peritoneum of a mouse, showed influenza bacilli and Type IV. pneumococci. All attempts to test the potency of the convalescent serum before use have been unsuccessful. The authors conclude that such sera have influence in shortening the course of the disease and in lessening the mortality.

#### (3) Serum Treatment of Bacillary Dysentery.

P. T. Lantin has made a preliminary report on the results of applying various methods of giving serum to the treatment of bacillary dysentery (*Philippine Journ. Science*, Sec. B., September, 1918). He has employed a polyvalent serum made by the Bureau of Science at Manila. With this serum he has treated 20 patients suffering from bacillary dysentery. Bacilli were isolated from 11 out of 17 patients in whom the faeces were examined. Of the 20 patients 5 were treated medicinally, combined with intramuscular injection of the serum, 6 persons received intramuscular injections, 3 persons received intramuscular injections and also antidiysenteric serum *per rectum*, 3 patients received solely serum *per rectum* and 3 patients received intravenous injections. One patient died. This patient received medicinal treatment and intramuscular injection of serum. The author gives charts to show the effect of administra-

tion of serum upon the patient. The intramuscular injection of serum is not infrequently followed by a rapid fall of temperature. With the intravenous injection the fall of temperature is not infrequently still more rapid. When the serum is given by the bowels the temperature falls more slowly. The mortality among patients in the Manila General Hospital suffering from dysentery has been 18.9% among 266 patients. The mortality among those treated with the serum has been 5%.

#### (4) Benzyl Alcohol as a Local Anæsthetic.

W. A. Puckner (*Journ. Amer. Med. Association*, October 19, 1918) notifies that the Council of Pharmacy and Chemistry have accepted benzyl alcohol as conforming to the rules of the American Medical Association as a new, non-official remedy. Benzyl alcohol or phenyl-methylol is an aromatic alcohol occurring in tolu and other balsams, and is also produced synthetically. The alcohol is used as a local anæsthetic by injection hypodermically and by application to the surface of mucous membranes. It is used as a solution from 1% to 4% in water or physiological salt solution. The solutions may be sterilized by boiling them without danger of decomposition. The alcohol is markedly antiseptic, practically non-irritant and is not toxic in ordinary concentrations or doses. Benzyl alcohol is used as a local anæsthetic in the same way as the better-known members of this group.

#### (5) Amoebic Dysentery Treated with Thorium.

A. Frouin records some observations on the use of salts of thorium upon a patient who had suffered from amoebic dysentery for eight months (*C.R. Soc. Biol.*, Paris, February 3, 1917). The patient had returned from Tonquin suffering from dysentery since the commencement of pregnancy eight months previously. She had been treated with injections of emetine without improvement. The ingestion of ipecacuanha, according to the Brazilian method, along with small doses of sulphate of soda, had led to no improvement. Although the patient had received over fifty injections of emetine, and much ipecacuanha *per os*, she still passed six motions daily. Microscopic examination of the stools demonstrated the presence of amœbæ. The patient was placed on a milk and vegetable diet. She was given four to six grammes of sulphate of thorium with the food for five days, while, during the four following days, she received four grammes of sulphate of thorium in cachets. During these four days she received an enema of 200 c.cm. containing four grammes of sulphate of thorium. On the fifth day after the treatment had commenced the patient passed only one motion daily, and on the ninth day the patient left hospital. She had no recrudescence of the ailment later. Observations made after six months showed that amœbæ were absent from the stools. The author mentions other patients who had improved rapidly after the exhibition of thorium.



## UROLOGY.

## (6) Multiple Ureters.

Prior to the introduction of the modern cystoscope and of X-rays in urology, the detection of duplicated ureters rested on operative and post-mortem findings. These forms of anomalies were apparently regarded as rare. H. O. Mertz (*Urolog. and Cutan. Review*, October, 1918) has collected 300 cases in the literature, of which 260 are capable of classification. There were 131 instances of complete unilateral duplication, 59 of partial unilateral duplication, 47 of complete bilateral duplication, 9 of partial bilateral duplication and 14 of bilateral duplication, partial on one side and complete on the other. The author adds 16 hitherto unpublished cases. He finds that bilateral anomalies are difficult to diagnose clinically, and from the post-mortem evidence seem to be more common than the statistics indicate. In the majority of cases the renal pelvis is also duplicated. A few cases have been recorded in which a partial unilateral duplicated ureter was associated with a common pelvis. Under very rare conditions there may be two or more separate kidneys on one side, while five bladders, five kidneys and six ureters have been discovered in one individual. The fusion of a partially duplicated ureter may be situated at any point between the pelvis and the bladder. The author gives a full description of the varieties of vesical orifices. They are usually placed within the trigone, and Robinson maintained that they were never found outside this situation. This assertion, however, is not in accordance with fact. Weigert found that in mixed types the completely duplicated ureters crossed at the same level as the point of fusion in the partially duplicated ureters. This may be of use in ascertaining the point of fusion. The author states that while the anomaly is usually associated with other developmental peculiarities, duplication of the ureters is not associated with any special form of pathological lesion of the genito-urinary organs. He has found that there is nothing in the history of the cases that would lead the urologist to suspect the existence of multiple ureters. The diagnosis during life must depend on the results of pyelography. Braasch suggests that when the outline of the pelvis in the pyelogram is unusually small and is placed at a higher level than usual, duplication of the pelvis should be suspected. He adds a few words on the surgical aspect of these anomalies, and gives a series of skiagrams and other illustrations depicting the types of some of his cases.

## (7) Cystic Kidney and Hydronephrosis.

Carl Beck finds that cystic kidney—a rare condition—may easily be mistaken for hydronephrosis, and for this reason discusses their pathology and diagnosis side by side (*Urolog. and Cutan. Review*, October, 1918). It is supposed that cystic kidneys are either congenital or arise as retention cysts or are due to

a retrograde metamorphosis of tissue. Hydronephrosis is said to be caused mechanically by the obstruction to the flow of urine. The obstruction may be situated anywhere between the bladder and the pelvis of the kidney. It is further said to be caused by displacement of structures by growths outside the urinary organs. Cystic kidneys may be monolocular or multilocular. The monolocular cysts are usually congenital. There is little difference between the renal tissue associated with a monolocular cyst and a hydronephrosis, save that in the latter the remnant of the tissue functionates, while in the former it does not do so. In both conditions there is a tumour. In the case of cystic kidney the tumour is stationary, while in hydronephrosis its size varies characteristically. The patient may have a sudden desire to micturate, and may pass one or two quarts of urine, with the result that the tumour disappears. The varying size of the tumour is the most characteristic sign of hydronephrosis, but it is not always present. A monolocular cyst and a hydronephrosis present a smooth, elastic and uniform tumour. A multilocular cystic kidney may be detected in thin individuals as an irregularly shaped tumour. The urine may be normal or abnormal in both conditions. Pyelography is extremely valuable in diagnosing these conditions. It must, however, be recognized that the ureter in cystic kidney may be a useless appendage, and that the cannula may be arrested at a given point. In hydronephrosis it may be impossible to guide the cannula through the ureter, when the obstruction is not of a nature that admits of the passage of an instrument. In regard to prognosis, relative good health may be enjoyed for many years in both conditions. Treatment is sought to overcome pain or to relieve infection. The prognosis is bad in bilateral lesions. The author advises no treatment for a unilateral cystic kidney without symptoms. If symptoms are present, a multilocular cyst should be removed, if the second kidney is in good condition. When the second kidney is not functioning well, hydronephrosis on one side should be treated by nephrotomy.

## (8) Catheterization of the Ejaculatory Ducts.

A. L. Wolbarst claims that the usual treatment of spermato-cystitis or seminal vesiculitis fails to establish a free outlet for the pent-up products in the seminal vesicles (*Urolog. and Cutan. Review*, August, 1918). He finds that with patience and practice it is not difficult to pass a folliform bougie of whalebone into the ejaculatory ducts. He quotes from Luys's "Treatise on Cystoscopy and Urethroscopy" to bring to the notice of the reader the variations in the site and number of the orifices of the ducts. The most common site for the ejaculatory ducts to open is upon the lips of the utricle, while the site usually described, viz., on either side of the *verumontanum* to each side of the utricle is far less common. The author finds it necessary

to search carefully for the openings. For this purpose he prefers indirect urethrosopes (Buerger's or McCarthy's models), as these instruments give a clear magnified picture. Having determined the position of the orifices of the ducts, he substitutes the direct urethroscope of Luys and proceeds to pass the folliform bougie. A fine whalebone bougie is passed, and left *in situ* for several minutes. He then introduces a thicker one. Gradual dilatation soon renders the ejaculatory ducts patent. Stripping and massage will frequently effect the removal of casts of considerable size. The bougie always passes into the seminal vesicles and never into the *vasa deferentia*. The value of the treatment is spoken of in connexion with all infections of the seminal vesicles. He does not favour the passage of metallic bougies, as recommended by Luys.

## (9) Spinal Anæsthesia in Urology.

G. G. Smith and F. Allen plead for the more extended employment of spinal anæsthesia in urological practice (*Urol. and Cutan. Review*, November, 1918). They hold that the amount of fluid injected, rather than the strength of the solution, is of importance in connexion with the fall in vasomotor pressure. When the bladder region is to be anæsthetized, it is possible to give the injection low enough to keep the splanchnics intact. The anæsthesia induced by spinal injection lasts from 1½ to 2 hours. They prefer apothesine (novocaine), and give 0.05 grm. for cystoscopy and 0.1 grm. for more extensive operations. In their opinion the large majority of patients are suited for spinal anæsthesia. Persons with cerebro-spinal syphilis or with Pott's disease are regarded as unsuitable subjects, and in certain individuals with hypertrophic arthritis of the spine the puncture cannot be carried out. Many persons who are excellent subjects for a general anæsthesia are equally suited for spinal anæsthesia. A preliminary injection of morphine is given a half of an hour before the operation. The puncture is made between the first and second or between the second and third lumbar vertebrae in the middle line. Two cubic centimetres of cerebro-spinal fluid are allowed to escape and 1 c.cm. of the anæsthetic solution is injected very slowly. The only after-effect complained of is the so-called spinal headache, which yields, as a rule, to aspirin. They have not had a single death among 643 persons anæsthetized in this manner.

W. B. Dakin (*ibid.*) gives the indications for spinal anæsthesia in urology as follows: (i.) impaired renal function, (ii.) persons with very high blood pressure, (iii.) marked respiratory complications, (iv.) valvular diseases of the heart, (v.) hyperthyroidism, (vi.) cases in which it is desirable to lower the blood pressure, (vii.) persons who dread ether and ask for spinal anæsthesia, and (viii.) when no trained anesthetist is available for a general anæsthetic. The author holds that a spinal anæsthesia should never be given unless a local or general anæsthetic is contra-indicated.

## British Medical Association News.

### MEDICO-POLITICAL.

At a meeting of the Western Australian Branch, held at the Perth Public Hospital on November 27, 1918, the question of the establishment of a Medical Defence Fund was again considered. On the motion of Dr. D. P. Clement, it was resolved that this matter was not one with which the Branch could deal.

Dr. J. J. Holland proposed that the Branch should express their desire that the Federal Committee of the British Medical Association in Australia be asked to draw up a scheme for the provision of medical attendance to discharged soldiers under the Repatriation Department, and that they should consider the scheme at a later date. This was supported by Dr. W. T. Hodge and carried unanimously.

The Medical Officers' Relief Fund was considered. Dr. D. D. Paton moved that, in agreeing to the proposals, steps be taken to extend the scheme to apply to medical men who had not left Australia, but who had given their whole time to the service of the Defence Department. Dr. J. J. Holland seconded the motion, which was carried. It was resolved that a letter be sent to the Federal Committee conveying this resolution.

### THE FRIENDLY SOCIETIES IN VICTORIA.

The resolutions which the Friendly Societies' Association adopted in order to arrive at a settlement with the Victorian Branch of the British Medical Association have not been ratified by several of the orders. In these circumstances, the Victorian Branch enquired of the Disputes' Committee of the Friendly Societies' Association what steps they proposed to take to bring the orders they claimed to represent into line. A reply has been received to the effect that they have no plans for enforcing the terms of the settlement. It thus became quite clear that this association does not possess the authority necessary to bring about an agreement, and consequently the Victorian Branch intimated that it would be forced to deal directly and singly with the executive bodies of the several orders. A start has already been made, and the orders are being invited to sign agreements based on the findings of the Wasley Commission.

### THE MEDICAL DEFENCE SOCIETY OF QUEENSLAND.

The annual meeting of the Medical Defence Society of Queensland was held in the B.M.A. Rooms, Adelaide Street, Brisbane, on December 12, 1918.

The report of the Council was read and adopted.

It was stated that no legal cases had been dealt with during the year, but a letter had been received from one member, asking for the Society's support, should it be required, as he had been threatened with legal action by one of his patients. The Council promised him full support, on the understanding that in the event of proceedings being taken the matter should be handled by the legal advisers of the Society, but so far nothing further had eventuated, and the patient had evidently thought better of it.

Seven new members were elected during the year, one resigned, two left the State and two deaths were recorded with regret. The membership was 143.

The financial statement showed that £500 had been invested in the War Loan and £100 in the Queensland Medical Land Investment Company, Limited, and the assets of the Society were £848 11s. 10d.

The resignation of Dr. J. S. Clowes, who had been a resident of the Society for many years, owing to ill health, was accepted with regret, and Dr. A. Stewart was elected to fill the vacancy on the Council.

## Naval and Military.

### CASUALTIES.

A short list of casualties sustained by Australian troops on active service (the 453rd) was published two days before

Christmas. It is recorded that Captain Clive Frederick Robinson, M.C., is ill.

### HONOURS.

The following announcement appeared in the *London Gazette* of October 15, 1918:—

#### *Bar to the Military Cross.*

Captain Vernon Carlisle Brown, M.C., Australian Army Medical Corps. For great courage and resource in evacuating wounded from a forward area. The routes were being heavily shelled, and he established bearer relay posts in suitable positions after a full reconnaissance of the ground. During the whole operation his perseverance and initiative contributed largely to a quick evacuation of the wounded, while his energy and example stimulated the men.

It is also announced that Captain Mervyn John Holmes, D.S.O., Australian Army Medical Corps, has been awarded the *Legion D'Honneur (Croix de Guerre)*.

### APPOINTMENTS.

The following appointments, etc., have been announced in the *Commonwealth of Australia Gazette*, No. 195, dated December 19, 1918:—

#### **Australian Imperial Force.**

##### *First Military District.*

Captain C. C. Minty, M.C., 2nd Australian Casualty Clearing Station, to be Major. Dated 10th September, 1918.

##### *Second Military District.*

Michael Beresford Gunn, Australian Army Medical Corps, to be Captain. Dated 16th September, 1918.

Captain R. E. Jeffries, 13th Field Ambulance, to be Major. Dated 10th September, 1918.

Captain S. M. O'Riordan, 4th Divisional Army Medical Corps Details, to be Major. Dated 10th September, 1918.

Captain C. M. Samson, M.C., Australian Army Medical Corps, to be Major. Dated 10th September, 1918.

##### *Third Military District.*

Captain C. H. Anderson, Australian Army Medical Corps, to be Major. Dated 10th September, 1918.

Captain R. S. de C. Bennett, Australian Army Medical Corps, to be Major. Dated 10th September, 1918.

Captain J. T. Jones, M.C., 12th Field Ambulance, to be Major. Dated 22nd May, 1918.

Reginald Power, Australian Army Medical Corps, to be Captain. Dated 14th September, 1918.

Captain M. C. C. Seton, Army Medical Corps Reinforcements, to be Major. Dated 10th September, 1918.

Captain R. C. Withington, Australian Army Medical Corps, to be Major. Dated 10th September, 1918.

##### *Fourth Military District.*

Captain J. B. Birch, M.C., Australian Army Medical Corps, to be Major. Dated 10th September, 1918.

Captain I. B. Jose, M.C., 14th Field Ambulance, to be Major. Dated 10th September, 1918.

Captain C. H. Kellaway, M.C., 2nd Australian General Hospital, to be Major. Dated 10th September, 1918.

Captain W. J. E. Phillips, 1st Field Ambulance, to be Major. Dated 10th September, 1918.

Captain M. L. Scott, 1st Australian General Hospital, to be Surgical Specialist, and to be temporary Major whilst so employed. Dated 2nd September, 1918.

Captain W. L. Smith, M.C., Australian Army Medical Corps, to be Major. Dated 10th September, 1918.

Captain H. A. Wyllie, M.C., 1st Australian General Hospital, to be Major. Dated 10th September, 1918.

#### *To be Captains—*

Geoffrey Brutus Packham. Dated 15th October, 1918.  
Michael Oswald Stormon. Dated 15th October, 1918.

### APPOINTMENTS TERMINATED.

#### *Second Military District.*

Lieutenant-Colonel J. S. Purdy, D.S.O. Dated 31st October, 1918.

Major H. R. J. Harris. Dated 3rd December, 1918.  
 Captain G. L. Tomlinson. Dated 27th November, 1918.

*Third Military District.*

Major J. K. C. Laing. Dated 11th October, 1918. (This amends the reference to this officer which appeared in Executive Minute No. 756/1918, promulgated on page 2066 of *Commonwealth of Australia Gazette*, No. 165, dated 24th October, 1918.)

Major J. T. Tail. Dated 29th November, 1918.

*Fifth Military District.*

Major F. T. A. Lovegrove. Dated 3rd November, 1918.

**Australian Military Forces.**

*Second Military District.*

*Australian Army Medical Corps—*

Captain (Honorary Major) C. L. S. Macintosh, D.S.O., to be granted the temporary rank and pay of Lieutenant-Colonel whilst employed as Officer Commanding No. 4 Australian General Hospital. Dated 1st October, 1918.

*Third Military District.*

*Australian Army Medical Corps Reserve—*

Harold Whitfield Ward to be Honorary Captain. Dated 6th April, 1918.

*Fifth Military District.*

*Australian Army Medical Corps Reserve—*

The appointment of Honorary Captain O. Arnold is terminated. Dated 7th November, 1918.

**GRANT OF HONORARY RANK.**

The Governor-General in Council approved of the undermentioned, who have served in the Australian Imperial Force as Commissioned Officers, having the rank held by them in the Australian Imperial Force confirmed as Honorary Rank in the Australian Military Forces as follows:—

Officers who, on appointment for active service outside Australia, were serving, and are now serving, in the Australian Military Forces:—

*First Military District.*

*To be Honorary Lieutenant-Colonel—*

Captain H. H. B. Follitt, Australian Army Medical Corps. Dated 20th November, 1916.

*Second Military District.*

*To be Honorary Lieutenant-Colonel—*

Captain J. C. Storey, Australian Army Medical Corps. Dated 18th September, 1917.

Captain C. D. Wassell, D.S.O., Australian Army Medical Corps. Dated 19th September, 1917.

*To be Honorary Major—*

Captain T. M. Furber, Australian Army Medical Corps. Dated 25th February, 1916.

Captain C. L. S. Macintosh, Australian Army Medical Corps. Dated 14th November, 1916.

*Third Military District.*

*To be Honorary Major—*

Captain J. A. Smeal, Australian Army Medical Corps. Dated 29th January, 1917.

The undermentioned, who have served in the Australian Imperial Force as Commissioned Officers, are appointed to the Australian Army Medical Corps Reserve (temporarily), and are granted Honorary Rank equivalent to that held by them in the Australian Imperial Force:—

Officers who, on appointment for active service outside Australia, were not serving in the Australian Military Forces:—

*Second Military District.*

*To be Honorary Captains—*

J. G. Hunter. Dated 1st March, 1916.

C. J. Taylor. Dated 19th July, 1917.

*Fourth Military District.*

*To be Honorary Majors—*

H. H. Montgomery. Dated 22nd July, 1915.

K. N. Steele. Dated 20th June, 1917.

*To be Honorary Captain—*

H. Powell, M.C. Dated 1st December, 1915.

The undermentioned, who have served in the Australian Imperial Force as Commissioned Officers, to be appointed to the Reserve of Officers (temporarily), and to be granted honorary rank, equivalent to that held by them in the Australian Imperial Force:—

Officers who, on appointment for active service outside Australia, were not serving in the Australian Military Forces:—

*First Military District.*

*To be Honorary Major—*

H. V. Foxton. Dated 14th November, 1916.

*Second Military District.*

*To be Honorary Major—*

W. B. Carter. Dated 1st December, 1915.

*Third Military District.*

*To be Honorary Captain—*

S. M. Ware. Dated 1st December, 1915.

The following order has been issued under the date of November 23, 1918, dealing with the precautions necessary for the protection of Australia against the introduction of infective diseases.

Instructions to Senior Medical Officers on Transports and Hospital Ships arriving at an Australian port:—

(a) Medical inspection under the Quarantine Act will be held at the first port of entry into Australia. In order that the requirements of the Quarantine Act may be complied with it is necessary that the Senior Medical Officer shall be in a position to certify that he has personally inspected all military personnel not earlier than 48 hours and not later than 24 hours before arrival at port.

(b) This inspection shall be carried out by the Senior Medical Officer in an effective and orderly manner, so that he shall be in a position to make the necessary declarations without reservations.

(c) Upon arrival of the vessel at the first port of entry into Australia the Senior Medical Officer shall hold himself in readiness to attend the Quarantine Officer as soon as he is required after the arrival of the latter on board. The Senior Medical Officer shall be at the gangway head when the Quarantine Officer arrives on board. The requirements of the Quarantine Officer are to be attended to and given preference over all other business until he has completed his work.

(d) The Senior Medical Officer shall, before the arrival of the vessel in port, have filled in and completed the Health Report for Transports or Hospital Ships (Form Quarantine) with the accompanying schedules of sick persons (Quarantine A. and B.) or Supplementary Health Reports.

(e) After the arrival of the Quarantine Officer on the vessel the following procedure will be followed by the Quarantine Officer, and the Senior Medical Officer will be required to do whatever is required by the Quarantine Officer to ensure the rapid and effective completion of his work:—

(i.) Inspection of ship's papers in conjunction with the Captain and Surgeon of the ship.

(ii.) The Senior Medical Officer to attend upon the Quarantine Officer and arrange details of subsequent procedure.

(iii.) Inspection by Quarantine Officer of ship's crew and civilian passengers.

(iv.) Inspection of persons on the sick list (Form Quarantine) whose names have been indicated by the Quarantine Officer to the Senior Medical Officer as persons whom he wishes to inspect. All persons whose names are contained in Schedule "B" should, if not confined to bed, be mustered on the arrival of the Quarantine Officer.



(v.) Termination of inspection by Quarantine Officer and completion of procedure by signing documents and ship's papers.

Senior Medical Officers will be particularly careful in making such examinations and statements as may be necessary under the above instructions. Senior Medical Officers will impress on the Medical Staff the necessity for reporting to them all suspicious cases which occur on the voyage.

## Medical Matters in Parliament.

(Continued from page 539.)

The Premier submitted that they must either accept the Bill or reject it. He recognized the position which the honourable member had advocated of providing more facilities and greater access to those facilities, while leaving people to get cured of themselves. Such a position was logical and consistent, but it was not the principle of the Bill. Notification was part of compulsory treatment. It was a fundamental principle, and was indispensable. He saw no reason why they should not have an annual examination of everyone. Some day they would come to that, but he was not yet prepared to take so radical a step. As the Bill stood, there was no penalty attaching to the medical man who broke the obligation of secrecy. He moved to amend the clause by inserting the following sub-clause:—

Any medical practitioner who, otherwise than in accordance with the provisions of this Act, communicates to any person or in any other way makes known the name or address of any such persons shall be liable to a penalty not exceeding one hundred pounds, and shall be deemed to be guilty of professionally infamous conduct.

The amendment proposed by Mr. Dooley was lost by 16 votes to 32.

The amendment proposed by the Premier was agreed to.

An amendment proposed by Mr. W. Kearsley, to insert the word "occupation" after the word "name," was agreed to.

Amendments proposed by the Premier to insert the word "100" in place of the word "20," and to add the words, "or imprisonment for three months" after the word "pounds," were agreed to.

The clause, as amended, was agreed to.

Clauses 5 to 8 inclusive, as read, were agreed to.

After some discussion on the desirability of dealing with infective persons arriving in ports by ships, clause 9, on reporting cases, was agreed to as read.

Clause 10 and clause 11, as read, were agreed to after discussion.

On clause 12, providing that the communication of a medical practitioner as to the presence of venereal disease in a person intending to contract the marriage should be privileged, an amendment proposed by Mr. W. Kearsley, to insert the words "after giving information of his intentions to the person suffering from such disease" after the word "practitioner" in line 5, was agreed to. After discussion as to the advisability of making such a communication mandatory on the medical man the clause, as amended, was agreed to.

Clauses 13 to 21, as read, were agreed to.

On clause 22, reading—

The Director-General of Public Health, or if there is no person holding that office, a medical practitioner appointed by the Governor, shall be the Commissioner under this Act.

Dr. Arthur moved to strike out all the words from the beginning of the clause to the word "office," with the object of insuring that the Commissioner should be a man who was an expert in the treatment of venereal disease, and also able to devote the whole of his time to the duties of his office. The Director-General of Public Health was an excellent man, but had innumerable duties to perform. If additional duties were imposed upon him, it would seem to be utterly impossible for him to carry them out.

The clause, as amended, was agreed to.

The Premier moved to amend clause 23, dealing with hospitals making provision for the treatment of cases, by inserting the words, "the Minister may arrange with" at the beginning of the clause and by inserting the word "to" in place

of the word "shall." He also moved to strike out the whole of sub-clause (2), dealing with the power to withhold subsidy.

The clause, as amended, was agreed to.

On clause 24, dealing with advertisements, the Premier moved to insert the word "any" in place of the word "no" in line 1, to strike out the words "shall publish" in line 1, and to insert the words "who publishes" after the word "disease" in line 6, and to add the words "shall be liable to a penalty not exceeding £50" after the word "disease" in line 6. He also moved to strike out sub-clauses (4) and (5) and to insert the following:—

"Provided that nothing in this section shall apply to any books, documents or papers published in good faith for the advancement of medical or surgical science, or to any advertisement, notice or recommendation published by authority of the Commissioner or to any publication sent only to medical practitioners or to registered pharmaceutical chemists for the purposes of their business.

The amendments were agreed to.

Mr. T. Bavin moved to add the words, "or disease affecting the generative organs or functions, or of sexual impotence, or of any complaint or infirmity arising from or relating to sexual intercourse, or of female or menstrual irregularities" after the word "disease."

The amendment was agreed to, and the clause, as amended, agreed to.

Clause 25, as read, was agreed to.

On clause 26, setting forth the powers of the Minister, an amendment by Dr. Arthur to insert the word "shall" in place of the word "may" in line 1 was agreed to.

The Premier moved to insert a new paragraph after paragraph (b), to read:—

(c) provide by regulation for the reception, examination and treatment of such persons at such hospitals or places or by such medical practitioners free of charge.

The clause, as amended, was agreed to, and clauses 27 and 28, as read, were agreed to.

Mr. Holman moved to insert the following new clause:—

17. (1) Every person who, while suffering from any venereal disease in a communicable form, is knowingly employed or engaged in or about any factory, shop, hotel, restaurant, house or other place in any capacity requiring him to handle food intended for consumption by any other person or persons shall be guilty of an offence, and shall be liable on summary conviction to imprisonment for a period not exceeding one year, or to a fine not exceeding one hundred pounds.

(2) Every person shall be guilty of an offence punishable by a fine of not less than twenty pounds and not more than one hundred pounds who, at any time after the passing of this Act, employs or continues to employ any person suffering from any venereal disease in a communicable form, if, by reason of such employment, such person is required or permitted to handle any food intended for consumption by any person other than the person employed, unless the defendant prove that he did not know or suspect, and had no reasonable means of knowing or suspecting that the person so employed by him was suffering from such disease.

The new clause was agreed to.

The Premier moved:—

"That the following new clause follow clause 27 of the Bill. Without limiting the operation of the provisions of this or any other Act, every person who, without legal justification or excuse, falsely alleges, whether by words or otherwise, that any other person is suffering or has suffered from venereal disease (whether the form of such disease is specified or not), shall be guilty of the offence of publishing defamatory libel, and the provisions of the *Defamation Act, 1912*, as to the offence of publishing a defamatory libel shall apply accordingly."

The new clause was agreed to.

The Premier moved:—

That the following new clause follow new clause 28 of the Bill: This Act shall commence and take effect on a date to be proclaimed by the Governor. In such proclamation the Governor may declare a date or dates upon which this Act shall come into operation, either generally throughout New South Wales or throughout any area or areas which may be defined in such proclamation. The new clause was agreed to.

Dr. R. Arthur said that it was important to remember that neglected and State children, some of whom were illegitimate, were perhaps affected with hereditary diseases in greater proportion than were legitimate children, and that they should not be boarded out with families until after they had been examined and it was possible to certify them as free from venereal disease. He had come across a very lamentable case some months ago, where an infant had been boarded out with some married woman, and it was found a few weeks after she had taken charge of the child that she had become infected, he thought, on the mouth, through the child. He was not sure whether one or two of the children in her family had also become infected. He asked that the Committee accept as clauses:—

(1) If a Children's Court, established under the provisions of the *Neglected Children and Juvenile Offenders Act, 1905*, has reason to believe that a child, male or female, is suffering from venereal disease, the court may at any time either before or after committal of such child order an examination to be made of such child by medical practitioner, either male or female.

(2) In the event of the medical practitioner reporting that any child is so suffering, the court shall forthwith notify the Commissioner in writing, who may thereupon deal with such child as provided in this Act.

(1) No child shall be boarded out under the provisions of the *State Children Relief Act, 1901*, unless the said child has been:

(a) examined by a medical practitioner; and

(b) certified by such medical practitioner as being free from venereal disease, or no longer liable to convey infection.

(2) Such certificate shall be obtained at the expense of the State Children's Relief Board, and retained by it.

(3) Any person contravening this section shall be liable to a penalty not exceeding £20.

The new clauses were agreed to.

Mr. McKell asked what objections existed in regard to the proposal to give the Commissioner power to force a person suspected to be suffering from venereal disease to submit to an examination. Such power was given to the Commissioner in the Victorian Act.

The Premier said that he was prepared to accept an amendment, but the matter had received much attention at the hands of his colleagues in Cabinet, and they had decided, after much thought, to delete the proposal from the Bill. He thought that a clause similar to that suggested would ultimately be part of the Bill. At present, he thought that public opinion would not tolerate a decent, respectable girl being brought up by malice and examined as a result of a declaration concerning venereal disease. Such an occurrence would do more to discredit this type of legislation than any twelve other things which might happen.

Mr. T. Bavin urged that the operation of the Bill would depend largely on chance, unless some provision for compulsory examination was made. He had been informed by scientific men in the State that, if a measure of the kind under discussion were adequately administered, venereal diseases might be eradicated in one generation. An examination was necessary to make absolutely certain that a patient was suffering from venereal disease. Unless compulsory examination were enforced, it would not be possible to obtain any convictions under the clause necessitating patients visiting medical practitioners or attending hospitals.

Mr. McKell desired to move a new clause, reading:—

If a medical practitioner in giving a death certificate finds that death was primarily due to a venereal disease, he shall cause to be given to the Registrar-General a certificate showing the primary cause of death, and to the relatives of the deceased he shall cause to be given a certificate showing the secondary cause of death.

The temporary Chairman (Mr. P. Colquhoun) could not accept the amendment, as it was outside the scope of the Bill. It was an amendment of the *Births, Deaths and Marriages Act*, and this Bill had nothing to do with the registration of births, deaths and marriages.

The Bill was reported with amendments, and the report was adopted.

(To be continued.)

## THE JOURNAL OF ORTHOPÆDIC SURGERY.

*The American Journal of Orthopædic Surgery*, which is the official organ of the American Orthopædic Association, announces that, with the coming of the new year, it will enlarge its scope by serving also as the official organ of the newly-formed British Orthopædic Association.

Henceforth the name of the publication will be "*The Journal of Orthopædic Surgery*."

As this journal has been the only publication in the English language devoted to orthopædic surgery—and the greatly increased importance of the specialty during the war—it has been felt by the two Associations, which count among their members both the Director-General of Military Orthopædics for the United States, Colonel Brackett; and the Inspector of Military Orthopædics for the British Empire, Major-General Sir Robert Jones, that the best interests of the great mass of mankind, now suffering from crippling disabilities, will be furthered one step more by such an amalgamation. This closer relationship of all English speaking orthopædic surgeons has long been a cherished hope of Lieutenant-Colonel Robert B. Osgood, M.C., United States of America, to whose enthusiastic efforts the establishment *The Journal of Orthopædic Surgery* is largely due.

The journal will be published, as heretofore, by Ernest Gregory, Boston, who assumed the publication in January, 1916, when the journal made its previous step to progress from a quarterly to a monthly publication.

The Committees appointed by the British Orthopædic Association consists of R. C. Elmslie, M.S., F.R.C.S., Editor, London; T. R. Armour, F.R.C.S.; W. H. Trethowan, F.R.C.S., and H. Platt, M.S., F.R.C.S.; while C. F. Painter, M.D., F.R.C.S., and R. W. Lovett, M.D., F.R.C.S., comprise the committee appointed by the American Orthopædic Association. Miss Hannah Lissner, Boston, has been appointed in charge of the Editorial Department of the journal in America.

We regret to announce the death of Dr. Alexander Smith Aitchison, of Albert Park, Melbourne, which took place on December 24, 1918.

Dr. H. W. Sweetnam, the Surgeon-Superintendent of the Launceston General Hospital, has resigned his appointment. At a meeting of the Hospital Board held on December 19, 1918, Dr. Sweetnam said that the Premier had stated in the House that the British Medical Association had brought about his resignation. This was not the case, although the action of the Tasmanian Branch of the British Medical Association had strengthened his decision to resign. The British Medical Association was not only a Tasmanian body; it extended all over the Empire. It was his wish to act "straight and fair with them."

The announcement has been made of the appointment of Mr. H. B. Crosby, a member of the Legislative Assembly of South Australia, as an honorary commissioner to enquire into and report upon technical education, afforestation and the treatment of mental defectives in Great Britain, the continent of Europe and the United States of America. We have no reason to doubt that the honorary commissioner is fully competent to undertake the investigations into the first two subjects. The third subject is essentially a medical one, and no one not trained for many years as a psychologist and expert in psychiatry can investigate this problem to advantage.

## Books Received.

MODERN CHEMISTRY AND CHEMICAL INDUSTRY OF STARCH AND CELLULOSE, by Tarini Charan Chaudhuri, Professor of Chemistry, M.A.; 1918. (Calcutta: Butterworth & Co. (India), Ltd.; Sydney: Butterworth & Co. (Australia), Ltd.; Cr. 8vo., pp. 156. Price, 8s. 6d.)  
WAR SURGERY, FROM FIRING LINE TO BASE, by Basil Hughes, D.S.O., M.B., M.C., B.Sc., F.R.C.S., and H. Stanley Banks, M.B., Ch.B., D.P.H., with Special Chapters by Lieutenant-Colonel L. F. Smith, C.M.G., and Miss C. Bilton, R.N.C., Q.A.I.M.N.S., and an Introduction by Colonel Sir T. Crisp English, K.C.M.G.; 1918. London: Baillière, Tindall and Cox; Royal 8vo., pp. 638, with 9 coloured and 373 black and white illustrations. Price, 30s. net.



LESSONS ON MASSAGE, INCLUDING SWEDISH REMEDIAL GYMNASIICS AND BANDAGING, by Margaret D. Palmer; Fifth Edition; 1918. London: Baillière, Tindall & Cox; Demy 8vo., pp. 340, with two coloured plates and 135 other illustrations. Price, 10s. 6d. net. ABSTRACTS OF WAR SURGERY: AN ABSTRACT OF THE WAR LITERATURE OF GENERAL SURGERY THAT HAS BEEN PUBLISHED SINCE THE DECLARATION OF WAR IN 1914. Prepared by the Division of Surgery, Surgeon-General's Office (United States of America); 1918. St. Louis: C. V. Mosby Company; Melbourne: Stirling & Company; Demy 8vo., pp. 434. Price, \$4.00.

### Medical Appointments.

The announcement has been made in the *Queensland Government Gazette* of December 14, 1918, that Dr. James Booth-Clarkson has been appointed Deputy Commissioner of Public Health during any absence of the Commissioner.

Dr. Thomas Warren (B.M.A.) has been appointed Government Medical Officer at Mount Morgan, Queensland, during the absence of Dr. A. C. Mackenzie (B.M.A.).

Dr. James Booth-Clarkson (B.M.A.) has been appointed Acting Microbiologist, Analyst and Director of the Laboratory of Microbiology and Pathology of the Department of Public Health, Brisbane.

Dr. Charles Robert Lease (B.M.A.) has been appointed Public Vaccinator for the Northern District of Victoria, during the absence of Dr. T. S. Campbell (B.M.A.) on active military service.

Dr. Aylmer Alexander Macfarlane has been appointed Acting Superintendent of the Receiving House, Royal Park, and of the Hospital for the Insane, Royal Park, during the absence of Dr. C. G. Godfrey (B.M.A.).

Dr. David Tyrell Keyes (B.M.A.) has been appointed Medical Officer of Health of the Shire of Numurkah (Western and Moira Ridings), Victoria.

Dr. William Edward Brunskill (B.M.A.) has been appointed Medical Officer of Health in the Shire of Rodney (Tatura Riding), Victoria.

Dr. Allan Dunsmuir (B.M.A.) has been appointed one of the three Official Visitors of the Mental Diseases Hospital, New Norfolk, Tasmania, for the year 1919. The other Official Visitors are Mr. P. S. Seager and Mr. H. Ashton-Warner.

Dr. E. J. Crouch has been appointed, on the nomination of the Medical Council of Tasmania, a member of the Midwives' Registration Board, in accordance with the provisions of the *Midwives Act, 1918*, of Tasmania.

### Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xiii. Public Service Board, Western Australia: Senior and Junior Assistant Medical Officers, Hospital for the Insane.

### Medical Appointments.

#### IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	All Friendly Society Lodges, Institutes, Medical Dispensaries and other Contract Practice. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Aramac Hospital. Australian Natives' Association. Brisbane United Friendly Society Institute. Cloncurry Hospital.

Branch.	APPOINTMENTS.
TASMANIA. (Hon. Sec., Macquarie Street, Hobart.)	Medical Officers in all State-aided Hospitals in Tasmania.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
WESTERN AUSTRALIA. (Hon. Sec., Health Department, Perth.)	All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmain United Friendly Societies' Dispensary. Canterbury United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Friendly Society Lodges at Lithgow. Friendly Society Lodges at Parramatta. Auburn and Lidcombe. Leichhardt and Petersham Dispensary. Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. New South Wales Ambulance and Transport Brigade. Newcastle Collieries—Killingworth, Seaham Nos. 1 and 2, West Wallsend. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phoenix Mutual Provident Society.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, New Zealand.

### Diary for the Month.

Jan. 7.—N.S.W. Branch, B.M.A., Council (Quarterly).
Jan. 10.—Queensland Branch, B.M.A., Council.
Jan. 10.—S.A. Branch, B.M.A., Council.
Jan. 14.—N.S.W. Branch, B.M.A., Ethics Committee; Executive and Finance Committee.
Jan. 16.—Vic. Branch, B.M.A., Council.
Jan. 21.—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.
Jan. 24.—Queensland Branch, B.M.A., Council.
Jan. 24.—Central Southern Medical Association (Annual), Goulburn, N.S.W.
Jan. 28.—Tas. Branch, B.M.A., Annual Meeting.
Jan. 29.—Vic. Branch, B.M.A., Council.
Jan. 29.—Northern District Medical Association (Annual), Tamworth, N.S.W.
Feb. 4.—Tas. Branch, B.M.A., Council.

#### EDITORIAL NOTICES.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated. All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney, New South Wales.